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SOMATIC MANIFESTATIONS OF PSYCHONEUROSIS

BY

IAN DOUGLAS-WILSON, M.D., M.R.C.P.Ed.

Capt., R.A.M.C.

A striking feature of psychoneurosis observed in the Services during this war has been the frequency with which somatic symptoms are presented. As the underlying mental disorder is usually revealed only by direct inquiry, such cases are commonly referred for investigation to the general physician. The object of this paper is to indicate how a positive psychiatric diagnosis has been reached in cases of this type without recourse to the negative exclusive method of diagnosis, which, as Cook and Sargant (1942) have pointed out, is both costly in time and money and harmful to the patient.

Of 810 patients sent for a medical specialist's opinion to a military hospital in England, 231 were diagnosed as psychoneurotic. Of this number 202 reported with symptoms referred to a particular part or to several parts of the body. Cases with organic disease have been excluded from the series except where the mental factor predominated. Psychoneurosis is taken to include anxiety state, hysteria, neurasthenia, and obsessive neurosis. The cases must be regarded as selected, because most patients with psychiatric conditions, recognized as such, were referred direct to the psychiatrist.

Personal and Family Histories

The standards employed by Symonds and Russell (1943) in their investigation of head injuries were adopted for eliciting psychiatric histories. A history of mental disorder in close relations, of personal predisposition, or of actual previous psychiatric illness was recorded in 92% of all cases. The conditions were initiated, with one exception, without exposure to the strain of actual warfare. It is therefore not surprising that the percentage of predisposed subjects is higher than in Love's (1942) casualties at Tobruk and Symonds's (1943) cases of flying stress. The absence of personal or family predisposition was taken as an indication for redoubled caution in applying a psychiatric diagnosis. The constitutionally stable tend to develop psychoneurosis only after severe stress, the nature of which was usually elicited for the purposes of diagnosis. Some of the factors determining onset have been discussed elsewhere (Douglas-Wilson, 1943).

Presenting Symptoms

Symptoms were presented in the following order of frequency (231 cases):

Focal symptoms	202	(87.4%)
Dyspnoea, palpitation, precordial pain, etc.	53	
Headache	52	
Respiratory symptoms	36	
Abdominal symptoms	25	
"Rheumatism"; other motor and sensory disturbances	23	
Urinary symptoms	13	
General symptoms	29	(12.6%)
Nervousness	7	
Lassitude	6	
Amnesia	4	
Dizziness	4	
Rare symptoms	8	

These figures are for the symptoms mentioned first or given greatest prominence by the patient. They do not reflect the total incidence of each group of symptoms. Combinations of two or more groups were common. For example, dizziness, though it was the primary complaint in only four cases, was a frequent subsidiary symptom, especially where the patient complained chiefly of dyspnoea, headache, or cough.

1. Cardiac Symptoms

The impression that the so-called "effort syndrome" is a manifestation of anxiety state has been strengthened in the last four years, though some cardiologists are not satisfied that it is entirely a psychosomatic manifestation. Wood (1941), in a careful analysis, found a family history of nervousness, insanity, or epilepsy in 56% of his cases, and noted that they showed "constitutional timidity and character inferiority."

Personal and Family Histories.—Of the 53 cases in this group 50 gave a positive family history of mental disorder or of personal predisposition. Sixteen were intellectually below average, and two illiterate. Thirty-one of the patients had been in civilian employment demanding little physical exertion. The three with no personal or family predisposition had all been submitted to extrinsic influences that had directed attention to the heart. One, after a long period in hospital with rheumatic fever, had received medical advice that strenuous exertion should always be avoided. The second was a man of 40 who, after prolonged sedentary employment, went on a battle course, where he was alarmed at his inability to keep up with younger men. The third was a man of 35, with a poor personality, who had done no work on account of weakness and palpitation since he had had rheumatic fever ten years previously.

Aetiology.—Physical and emotional stress, infection, and trauma are recognized as important aetiological factors. The induction of symptoms by suggestion through prolonged confinement to bed or by doctors' or relatives' warnings was found in 14 cases. It was noted that, whatever the reason for the patient's having been confined to bed—it varied from head injury to "nervous breakdown"—the patient himself had supposed that it was because of "something wrong with the heart." Not one of the patients that had been instructed to "take things easy" had sought further advice after the initial warning, which had been scrupulously observed in every case but one. In one case the condition appeared to be a specific response to conditions of war:

A corporal aged 49 had had palpitation, dyspnoea, and precordial pain while serving with the German Army in the First Great War. The symptoms subsided at the end of the war. After experience of a concentration camp he developed an anxiety state, but he had no further symptoms referred to the heart until he entered the British Army during the present war. The symptoms of which he had complained in the first war then recurred, though his Service employment was limited to the light work of a storeman, and he was considerably freer from physical and mental stress than he had been in Germany.

Several factors contributed to the production of the condition in some cases.

A private aged 39, with 15 years' unbroken service, reported with dyspnoea of one year's duration. His symptoms had started when he was transferred from a sedentary job to an active training unit. He said that he could run only 50 yards, when "everything went black" and he got stabbing precordial pain and palpitation. The symptoms had been worse in the last six months since a brother had been discharged from the Army owing to heart disease. A sister, killed two years previously, had had heart disease, and another brother was excitable and nervous. The patient had had a sub-average school record and, after several jobs as a labourer, had entered the Regular Army. He had liked his previous employment, in which he had apparently given satisfaction, but had not adapted himself to his new work. He had difficulty in keeping up with younger men and in learning new training: "it worries me that I will not please." He had been a bed-wetter till the age of 15, had recently had frequent sustained heavy headaches, was sleepless, and was subject to nightmares. He was depressed if not occupied, constantly recalling the death of his mother, who had been killed in an air raid two years before. He was absent-minded, had difficulty in mental concentration, and was tremulous and sweating under strain. He was unmarried, of temperate habit, and had a blameless Service record. He was mentally slow, tense, anxious, and co-operative. Physique was only fair, and he looked older than his years. There was no other evidence of organic disease.

The Clinical Syndrome.—The average age of the 53 patients was 31.1 years. Symptoms prior to enlistment were claimed by 25, in all of whom the condition had been aggravated by Army service. In two cases symptoms had first developed between the time of medical examination and mobilization. Particular help in diagnosis was obtained by tracing the relationship of onset and exacerbation to mental stress. In every case it was admitted that the amount of exercise required to induce symptoms varied. Dizziness, palpitation, "black-outs," and sighing for breath were further distinguishing features. Precordial pain was claimed in 42 cases, but its character seldom suggested organic cardiac disease. It was most often described as shooting or stabbing (20); less frequently as aching (7); drawing, pulling (3); cramp-like (3); and rarely as throbbing, tight, tearing, or "a strained feeling." More bizarre descriptions were given in three cases. Little help was obtained from examination of the cardiovascular system in the mild cases that constitute the majority in this series. Phobias or obsessions were admitted in 9 cases. These consisted of a sense of being gripped by the throat, associated with inability to wear anything round the neck; a feeling of suffocation in bed; an urge to breathe deeply "because no air is coming in"; and awaking with a sense of impending dissolution.

The psychiatric background in these cases has been the subject of detailed analyses (Wittkower, Rodger, and Wilson, 1941). The personality types most often encountered in this series were: (1) the immature, dependent type, usually querulously hypochondriacal; (2) the aggressive, resentful subject, who speaks defiantly of "my leaking valve" and resists reasoned reassurance; (3) the patient of inherently unstable temperament, with marked predisposition or actual previous history of psychiatric illness; (4) the artistic, "highly strung" man, with little liking for or adaptability to Service life; (5) the constitutionally stable type, who develops cardiac symptoms as an isolated manifestation after gross physical or emotional stress or after strong extrinsic direction of attention to the heart: in the Army, the most striking example of this group is the soldier of 35 to 40 who is called on to undertake strenuous training alongside younger men.

2. Headache

One hundred and thirty-one, or 57% of all cases, reported the presence of headache. This was described as heavy (34), pressing (32), aching (22), tight (12), throbbing (11), beating (5), shooting (5), tugging (3), and numb (2). Bizarre descriptions were given in five cases. The pain was said to last for many hours or days with little variation in intensity, or to come on in the mornings and to pass off about midday. It was sometimes aggravated by exercise, worry, excitement, heat, or a visit to the cinema. Partial relief was sometimes admitted by holding the head, mental diversion, and aspirin. In other cases no aggravating or relieving factors were recognized.

Twenty-seven of the 52 men with headache as the primary complaint dated their symptoms from previous head injury. It is noteworthy that 11 of these were intellectually dull. These patients, even more than those complaining of headache without previous trauma, were preoccupied with the condition of their heads, and, in particular, with the possibility of further head injury. Two had made complete recoveries from severe head injuries and, after further trivial trauma, had developed gross psychoneurotic states with persistent headaches.

Of the 25 patients who had not been injured only two were intellectually below average. The development of headache as an isolated symptom of anxiety was recorded in four patients of conscientious type and excellent intelligence.

A padre in the middle thirties, who had been with a division that had seen much fighting, reported with unremittent pressing headache. He had been troubled by conflict between a sense of obligation to return to his division and fear that he might not continue under battle conditions to show the example that he felt was due from him.

Patients complaining of headache are sometimes preoccupied with fears of insanity or brain tumour. Dizziness and "black-outs" are common associated symptoms. The "black-out" is described as "a mist coming over the eyes" or as "a curtain drawn over the eyes."

3. Respiratory Symptoms

The complaint in each case of this group, whose average age was 29.9, was cough. No case has been included in which there was any abnormality on routine physical and radiological examination, and, in particular, cases of asthma have been excluded. There is no basis for regarding cough as either an expression of hysteria or a manifestation of vegetative neurosis. It is probable that some degree of tracheitis was present in each case. That tracheitis is prevalent in the Army is suggested by the questioning of 100 healthy controls, of whom 62 reported a persistent "smoker's cough."

The most frequent factor determining the patient's preoccupation with his chest was found to be family or personal experience of chest disease. Eighteen of the 36 cases gave a family history of tuberculosis in parents or siblings, and admitted to fear of this disease. Eleven others had had previous serious chest disorders, such as pneumonia. The cough was typically present throughout the year, with little seasonal or diurnal variation. A small amount of sputum was said to be expectorated. Some patients, especially those who had witnessed tuberculosis in their families, claimed loss of weight, night sweating, and even haemoptysis. Pains in the chest were reported in two-thirds of this series: it was described most often as tight, aching, or shooting; rarely as burning, searing, or heavy. Gross dyspnoea on exertion was reported in all except two cases. One of these had previously had pleurisy and feared tuberculosis. The other, as well as cough, had stabbing precordial pain and palpitation, and was alarmed at the possibility of heart disease, of which his mother had died. Twelve patients, in addition to dyspnoea, had other symptoms related to the heart. Of these, two, though their initial complaint was of cough, later admitted preoccupation with the possibility of heart disease.

4. Abdominal Symptoms

The true proportion of psychoneurotics presenting abdominal symptoms is not reflected in this series, as abdominal cases were mostly seen at a separate clinic, experience of which suggests that the syndromes presented fall commonly into one of these groups:

(*a*) The patient complains of vague diffuse pain, the site of which is indicated by sweeping the hand across the upper abdomen. It may be described as aching, burning, sharp, or heavy. It often dates from youth, is unremittent, and is progressive only from entry into the Service, this progression being attributed to "greasy food." It is constant throughout the day, but does not interrupt sleep. It is worse after meals, and alkalis provide, at best, only partial relief. Flatulence is prominent, and vomiting after all meals may be reported. The bowels are usually constipated. A family history of gastric disorders is forthcoming in half the cases. Examination shows no recent loss of weight. There is diffuse upper abdominal tenderness without special localization. Aerophagy may be witnessed, and, in hospital, vomitus is found to consist of a mouthful or two of fluid regurgitated soon after meals. Temporary relief may be obtained by dieting, but, as Tidy (1943) has pointed out, relapse occurs as soon as the patient is discharged from hospital.

(*b*) The patient presents a group of symptoms that are compatible with peptic ulceration. The barium meal shows a hypertonic active stomach, and the fractional test meal may reveal hyperchlorhydria.

(*c*) The patient reports on account of constipation, lienteric diarrhoea, or griping lower abdominal pain. A spastic colon may be palpated.

(*d*) A bizarre picture is presented. An officer aged 32 gave a five-months history of constant unvarying nausea and "sense of apprehension" in the umbilical region. It was found that the symptoms had begun when he heard that his wife was pregnant.

5. "Rheumatism"; Other Motor and Sensory Disturbances

Twenty-two patients reported with muscle or joint pains. The localization of pains in five was accounted for by previous trauma or operation. Of the remainder, the factor determining localization could be detected in only one case—that of a patient, aged 41, who had had "a clawing feeling" and sense of coldness in both knees for nine years, since the doctor treating him for gonorrhoea had said that rheumatism might ensue as a complication. In the other cases pain was described as being in either muscles or joints, and was said to be constant and often symmetrical. It was most commonly aching, less frequently shooting, numb, pulling, cramp-like, or "a flushed feeling." Associated weakness was found in only one case, and no disturbance of cutaneous sensation was detected. Two patients who reported with lumbar pain admitted to preoccupation with the possibility of tuberculosis, of which there was a family history in each case.

One man, aged 31, with gross variable tremor of the right upper limb, reported that this had been present since a blow in the mid-thoracic region of the back at the age of 12.

6. Urinary Symptoms

The 13 patients reporting with urinary symptoms were juvenile immature types who particularly missed their home environments. Seven patients, five of them grossly dull and backward, reported nocturnal enuresis from infancy. All had noticed recent aggravation of the symptom. This was attributed by five to self-consciousness under Service conditions: one had noticed exacerbation since he had married, and the last dated the increase from the incidence of business worries. Six cases reported the recent onset of frequency, three of these having also recent nocturnal enuresis. Four of these patients were mentally dull. The onset in three had been associated with fears of venereal disease following exposure to infection. In the other three the symptoms had begun on enlistment, which had been associated with concern about separation from families. One of these patients, aged 39, gave a story of regular and classical migrainous attacks from enlistment two years previously. These simulated exactly the migraine to which his wife had always been subject.

Discussion

Patients in this series, although their symptoms were predominantly somatic, readily admitted, on direct questioning, to concomitant mental manifestations. Where the onset was recent they quickly gained insight into the psychological origin of their condition. This coincides with the experience of Gillespie (1941) and others that the so-called "war neuroses" arise at a superficial level and seldom result in permanent personality changes.

Symptoms often coexisted in more than one system. For example, 81 of the 178 cases that did not primarily claim cardiac symptoms reported, as subsidiary complaints, dyspnoea, palpitation, or precordial pain. It appears undesirable that psychoneurotic states should be classified into such categories as "effort syndrome," because such grouping focuses unwarranted attention on a single aspect of the condition and, as Hyland and Richardson (1942) have pointed out, tends to obscure consideration of the underlying personality disorder.

Evidence of personal predisposition or a history of psychiatric illness in close relatives was found in most cases. Important factors determining the localization of somatic symptoms were existing trivial organic disorders; previous personal or family history of organic disease in the affected system; and recall of earlier warnings by doctors and relatives about the condition of the system involved. In some cases with cardiac symptoms prolonged confinement to bed had fixed attention on the heart; while in others the strenuous Service life had contributed to the localization. In most cases where a factor determining localization was found, the patient admitted to fear of organic disease. The patient did not always refer symptoms to the system in which disease was feared.

In the remaining patients no factor determining localization could be found. These mostly had symptoms that were directly attributable to autonomic imbalance, such as "hypertonic gastritis" and frequency of micturition. It appears that revision of nomenclature is necessary to differentiate such "functional" conditions in which there is definite physiological disturbance, from those in which physiological disturbance is absent or unproved. This could best be effected by discontinuing the use of "functional" to describe either type.

The manifestations of anxiety state are now generally attributed to dysfunction of the sympathetico-adrenal reflex. More speculative psycho-analytical work suggests that the site of symptoms is conditioned by profound mental factors, the physiological response varying with different emotional tensions (Alexander, 1943). Whatever the ultimate cause, there can be little doubt that the immediate cause is organic, because, whatever the system affected, the symptoms tend to conform to fixed patterns. Divergence from these patterns suggests that the condition is attributable to hysteria or that the symptoms of vegetative neurosis have suggested to the patient hysterical features which have been superadded.

Summary

The presenting symptoms in 202 cases of psychoneurosis reporting with somatic manifestations have been analysed. Predisposition to mental disorder was found in nearly all cases.

Important factors determining the localization of symptoms were found to be family or previous personal history of organic disease in the system involved and existing trivial organic disorders.

Cardiac symptoms had been suggested to some by long confinement to bed or by warnings to avoid exertion. In others, the energetic Service life had directed attention to the heart. In several, more than one extrinsic factor had produced the condition. Associated phobias were sometimes present.

Chest symptoms were commonly associated with fear of tuberculosis, of which there was a family history in half the cases. Gross dyspnoea was the rule.

Headache was seldom of a type that suggested organic disease. The patient was often preoccupied with the possibility of brain tumour or insanity, and—where the condition followed head injury—with the possibility of further trauma.

Abdominal symptoms, except when due to hysteria, tended to conform to one of three groups of symptoms. In some there was definite physiological disturbance.

Urinary symptoms were reported by patients of immature and dependent type.

Somatic manifestations, when due to anxiety states, usually conform to definite recognizable patterns. Symptoms often coexist in more than one system.

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Last July tens of thousands of contributors to the Hospital Saving Association decided to mark the 21st anniversary of their Association by a free-will offering of thanks to hospital nurses. They raised £12,000, which will be devoted to providing much-needed scholarships. These will be awarded annually over the next four years as follows: two scholarships for nurse dietitians of £250 each, four for nurse teachers of £200 each, four for health visitors of £105 each, twelve for industrial nurses of £65 each, and four for midwife teachers of £75 each. The Rushcliffe report brought some improved conditions for nurses, but the proper training of new entrants will still depend upon competent teachers. H.S.A. scholarships will go a little way to securing these teachers and may stimulate others in the provision of postgraduate educational facilities.

LUNG ABSCESS IN RELATION TO THE INFLUENZA EPIDEMIC

BY

ELI DAVIS, M.D., M.R.C.P., M.Sc.

Deputy Medical Superintendent and Physician, St. Andrew's Hospital (L.C.C.)

In the fourth week of Nov., 1943, the influenza wave impacted upon St. Andrew's Hospital. Some forty days later influenza admissions dropped abruptly. During this period 5 cases of lung abscess (3 fatal) were seen among 17 patients aged 12 to 60 with influenzal pneumonia. They are described below. Of the 12 other patients, 2 died, and one of the latter cases (on which a necropsy was done) is also described. Results of sputum cultures and white cell counts are given in the Table.

Summary of 6 Cases of Influenzal Pneumonia, 5 with Lung Abscess

Case No. and Outcome	Bacteria in Sputum	Site of Abscess
I: Recovery	Staph. aureus (pure culture)	Right upper lobe
II: Death	" " " "	Left "lower" lobe; left eye
III: Recovery	Staph. aureus; H. influenzae; haem. strep.	
IV: Death	Staph. aureus; H. influenzae; pneumococcus	Right upper lobe
V: Death	Staph. aureus; pneumococcus	Right middle lobe; right brain
VI: Death	Haem. strep.; H. influenzae	None

At the height of the disease the white cell counts ranged from 11,000 to 18,300 per c.mm., with polymorphonuclears around 80%.

Case I

A housewife aged 38 was admitted with pneumonia of the right upper lobe, following influenza two weeks earlier. There was no response to full doses of sulphathiazole, and within 48 hours of admission radiological evidence of abscess of the right upper lobe was seen. She coughed up 2 oz. of slightly blood-stained purulent sputum daily, mostly after postural drainage. After four weeks of acute illness in hospital, with a temperature swinging between 99° and 102° and a pulse rate of 100 to 128 a minute, she began to recover steadily. Her serum contained no antibody for psittacosis antigen (Prof. S. P. Bedson) and no cold agglutinins.

Case II

The illness of this patient, a labourer aged 40, began with dizziness and collapse five days before admission. There followed pain in the chest, cough, and scanty sputum but no haemoptysis. When seen he was panting and cyanosed; temperature 101.4°, pulse rate 92, respirations 32 a minute. He was regarded as a case of influenzal bronchopneumonia, with the right lung more involved than the left. There was heavy albuminuria. He died in 48 hours, having had 18 g. of sulphapyridine, oxygen, and nikethamide. At necropsy the right lung showed confluent bronchopneumonia, with numerous abscesses 0.5 cm. in diameter in the anterior half of the upper lobe, collapse at the base of the lower lobe, and purulent bronchitis. There was right serofibrinous pleurisy, with 15 oz. of pleural fluid. The left lung showed oedema and congestion only.

Case III

In this case, that of a lorry driver aged 33, influenza began one week before admission and was followed by rigors, cough, and scanty rusty sputum. On admission he had left basal crepitations. Temperature 100.8°, pulse 112, respirations 28. Severe left uveitis developed in two days, and blisters on his fingers 24 hours later. The left eye became more and more inflamed until there was a panophthalmitis. Sulphapyridine was given in full doses from admission and sulphacetamide was applied to the eye, but without benefit. The left eye was removed on the 12th day of the disease by Mr. M. Shaw. A radiograph on the 15th day showed an abscess of the left lower lobe. Temperature and pulse settled on the 24th day, and there was steady improvement thereafter, with natural healing of the abscess.

Case IV

A labourer aged 57 had suffered from chronic bronchitis for years. He collapsed one week before admission, and cough with yellow sputum developed. When admitted he showed marked cyanosis and dyspnoea, general bronchitis and right bronchopneumonia; temperature 99.4°, pulse 132, respirations 32. He seemed to respond to sulphapyridine, the fever subsiding quickly and the temperature remaining down while on sulphapyridine (25 g. given) and for a further 60 hours. The temperature then rose again and ranged from 98° to 103°. On the 23rd day of the disease the sputum became bloody and treacly, and abscess of the right upper lobe was diagnosed and confirmed by *x* rays. He coughed up 14 oz. of sputum daily, mostly in the morning, after postural drainage. His temperature settled (spontaneously) on the 43rd day of the disease, but his general condition deteriorated, and he died afebrile on the 46th day. Necropsy was refused.

Case V

A female munition worker aged 20 was taken ill 5 days before admission with a rigor, tightness behind the lower sternum, and slight cough with scanty sputum. On examination she presented a toxic aspect, and had a few crepitations over the right anterior axilla; temperature 103°, pulse 120, respirations 24. The temperature dropped abruptly after 6 g. of sulphapyridine, but rose again, gradually at first, despite continuing with the drug. By the time 25 g. was given the temperature had reached 104°. Sulphapyridine was stopped. Fever continued swinging from 100° to 104° for the next ten days. Rales became numerous at the right base. The patient insisted that she "felt fine." A drachm or so of nummular sputum was coughed up daily, and was haemorrhagic only once. On the 21st day of the disease tinkling rales were heard over the right mid-zone, and lung abscess was considered. Rales were also heard over the left base. Sulphamezathine therapy was begun; but by the 23rd day deterioration was pronounced, with drowsiness, contracted pupils, and bilateral papilloedema. The cerebrospinal fluid was turbid with masses of polymorphonuclears, but no organisms were grown from it. Sodium sulphadiazine (5 g.) was given intravenously, and was repeated next morning, in addition to oral sulphamezathine. She died on the 25th day of the disease.

Chest Radiographs.—On the 9th day of the disease *x*-ray films of the lungs showed no abnormality; on the 15th day there was a right hilar shadow (later proved to be due to lung abscess), with surrounding pneumonia. Blood culture was negative.

Necropsy.—There was muco-purulent bronchitis. The right middle lobe showed grey consolidation. Anterior to this grey area was a superficial acute abscess 5 by 4 by 4 cm., extending nearly to the midline behind the sternum. There was a spread of pus to the mediastinum above the base of the heart, with two small secondary abscesses here, near enlarged lymphatic glands. Intense congestion, collapse, and recent bronchopneumonia were observed in the right and left lower lobes, and recent fibrinous pericarditis. The spleen was moderately enlarged, congested, and soft. In the brain were two superficial acute abscesses, 2.5 cm. in diameter, containing green pus—one in the right temporo-parietal region, and one in the right occipital region, with purulent basal meningitis. The middle-ears were clean. The pus from the brain abscess grew a pure culture of haemolytic streptococci, although the organisms from sputum culture were *Staph. aureus* and pneumococci.

Case VI

A housewife aged 56 gave a history of two attacks of influenza in the previous month. The second attack began two weeks before admission and was followed by cough and chest pain. On examination there were signs of left basal consolidation and right bronchopneumonia. The temperature (99.6°) soon subsided with sulphapyridine therapy, and by the time 22 g. had been given had been normal 48 hours. The drug was stopped, but the temperature rose again, and continued to swing between 99° and 101°. She coughed up 1 oz. of blood-stained sputum daily. The lung signs persisted, and she deteriorated, dying on the 19th day in hospital. She had been given sulphamezathine for the last 36 hours of life.

Necropsy.—There was a diffuse, coarsely granular consolidation of all lobes of both lungs and dense diffuse fibrosis of the bases. The appearances suggested unresolved pneumonia on a previously fibrotic lung, and this was confirmed histologically. There were recent bilateral fibrous pleural adhesions. The spleen was twice the normal size, oedematous, congested, and soft.

Discussion

Influenzal pneumonia was diagnosed on clinical grounds. The disease began in most of the patients with the features characteristic of the influenza prevalent in the neighbourhood—fever, malaise, generalized aches and pains, and cough with scanty sputum. When pneumonia developed the temperature was not initially as high as in lobar pneumonia, but fever was more prolonged. Physical signs were not clear-cut. White cell counts were essentially the same as in primary lobar pneumonia. The sulphonamides had no obvious effect in at least 12 of the 17 cases. The remaining 5 cases cleared up well concurrently with the administration of sulphonamides.

It is conceivable that complications and mortality would have been greater but for the sulphonamides, but I do not think so.

The 17 patients considered in this paper were aged 12 to 60. Pneumonia in infants did not differ essentially from the cases I saw in the previous year. Many chronic bronchitics over the age of 60 who would almost certainly have died during the winter from bronchopneumonia and congestive heart failure had death precipitated by influenza. Of the 17 cases, 12 recovered. Recurrent epistaxes were prominent in one boy, another patient had haemorrhagic vesicles of the inner cheeks, and one had a small pleural effusion. Pneumonia was bilateral in 4 patients. Before the epidemic proper began, 2 cases of influenzal pneumonia were seen—a fatal case in August on which a necropsy was done, and one in mid-October which recovered.

It is of interest to compare this experience of influenzal pneumonia with 5 deaths and 5 cases of lung abscess (and *Staph. aureus* the chief organism concerned) with recent experience of lobar pneumonia. From Oct. 1, 1942, to Dec. 31, 1943, I saw 107 consecutive cases of primary lobar pneumonia, the ages ranging from 5 to 65. There were 2 deaths, and 2 cases of lung abscess with recovery. From Jan. to Oct., 1943, I saw 13 cases of primary atypical pneumonia (one with rising titre of psittacosis antibody—Prof. Bedson), but none since. It is tempting to inquire if there is any relation between the recent frequency of primary atypical pneumonia and the influenza epidemic.

Concurrently with the influenza epidemic, primary lobar pneumonia became much more frequent here: 26 patients aged 5 to 65 were seen in 40 days, with one death. It may be that a number of these cases were really influenzal pneumonias, but there was not enough clinical evidence for so regarding them.

Summary

In the recent influenza epidemic, among 17 cases of influenzal pneumonia—ages 12 to 60—there were 5 deaths. There were 5 cases of lung abscess (3 fatal), and one patient who recovered had a metastatic panophthalmitis. *Staph. aureus* was an important invader. Sulphonamides were not beneficial. In 107 cases of primary lobar pneumonia—aged 5 to 65—there were 2 deaths, and 2 cases of lung abscess with recovery.

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PROGNOSTIC VALUE OF LABORATORY INVESTIGATIONS IN TYPHOID FEVER

BY

S. S. BHATNAGAR, M.D., Ph.D., F.R.C.P.

Lieut.-Colonel, Indian Army Medical Corps

(From a Combined Indian General Hospital, India Command)

Laboratory investigations in typhoid fever are usually employed for the confirmation of clinical diagnosis, either directly by the isolation of the infecting organism from blood, urine, or faeces, or indirectly by the estimation of antibody production, chiefly Vi and O agglutinins, as proof presumptive of the presence of *Bact. typhosum* in the human body. In military hospitals in India blood cultures in the early stages, agglutinations throughout the course of infection, and collection of evidence for the excretion of micro-organisms, even during convalescence, comprise the routine procedure for such cases. The analysis of collective results so obtained, in conjunction with clinical observations, indicated that the various combinations of signs and symptoms met with in this disease were associated with distinct variations in laboratory findings, the study of which was of considerable prognostic significance. Not only was it thus possible to gain an insight into the ups and downs of the struggle between host and parasite, but specific antityphoid serum therapy, practised in a large number of cases (to be presented in a subsequent communication), could also be placed on a more satisfactory basis.

The object of this paper is to describe and discuss the prognostic inferences drawn from a study of 280 cases of typhoid fever in which laboratory investigations were carried out at short intervals throughout the course of infection. Reference is made to certain aspects of the diagnosis and prophylaxis of typhoid that are directly related to the observations recorded here. For reasons of space tables and charts are not included.

The whole group of cases has been subdivided into six different clinical and bacteriological identities. Although some overlapping of symptoms, rather than of signs, was noticeable between the various subgroups, it was not extensive enough to confuse the main issues.

Clinical and Bacteriological Types of Typhoid Cases

1. *Simple Type.*—These cases presented the textbook description of the disease, with temperature which followed the course of three well-known stadia—*incrementi, acmes,* and *decrementi.* The total duration of pyrexia varied from 10 to 25 days, depending upon the inoculated state of the individual. In a person who had had multiple injections of T.A.B. vaccine—prepared in a reliable institution with appropriate strains of *Bact. typhosum*—all the stages were completed quickly, and the patient looked so well towards the end of the second week that, in the absence of laboratory diagnosis, doubts could be expressed as to the nature of the infection. Such cases were usually met with among military personnel with more than six years of colour service. In the uninoculated pyrexia was prolonged until the fourth week. In both types of individuals, however, the entire course of the disease was free from complications. Bacteriologically, blood culture was usually negative, since bacteriaemia in such cases was of short duration. Agglutination tests, on the other hand, were most satisfactory, and of the type commonly designated as "Widal-positive"; the O titre was about 200 and the Vi agglutinins were as described in a previous communication (Bhatnagar, 1938). It was easy to isolate the infecting organism from urine or faeces, or both, during the second, third, or fourth week. The strain isolated was agglutinable by both O and Vi sera, and its average lethal dose (a.l.d.), for white mice weighing from 20 to 22 g., was more than 100 millions—the V-W type of organism described by Kauffmann (1935).

2. *Ambulatory Type.*—These cases represented the other extreme of the prognostic picture in that they were invariably fatal. Before the patient was obliged to seek admission to a hospital or take to bed properly, he had been definitely ill for over a week. The case below illustrates the various points:

A robust, healthy man, 28 years of age and 14 stone in weight, was feeling seedy for about 10 days before admission to hospital. During this period he took aspirin and quinine regularly to enable him to carry out his duties. He was ultimately obliged to stay in bed. On admission enteric was suspected, and in spite of careful nursing and efficient palliative treatment his condition deteriorated. On the fifth day he complained of pain in the lower abdomen. Clinical examination revealed perforative peritonitis. His general condition was, however, so bad that any surgical intervention was ruled out; he died a few hours later with a rectal temperature of 110° F. Necropsy revealed typical typhoid ulcers in the small intestine.

Laboratory investigations in such cases were most disappointing: they presented a completely negative picture—so much so that the reliability of clinical diagnosis was questioned on more than one occasion. No Vi agglutinins were detected at any stage of the disease, although in some cases the O antibody titre could be considered to be suggestive of typhoid infection. Diagnosis could be confirmed post mortem only by direct culture from inflamed Peyer's patches, spleen, gall-bladder, and bone marrow. In the few cases in which this facility was available it was particularly observed that the growth of *Bact. typhosum* on first isolation was scanty and the strain of only average virulence—a.l.d. more than 100 millions, and the organism agglutinable by both O and Vi sera.

3. *Toxic Type.*—These cases were usually seen either among the civilian population or among military personnel—such as drafts arriving from over-seas—who had not had the benefit of multiple T.A.B. inoculations. The patient was clinically toxic before the end of the first week of illness; the skin

was dry and the tongue dry and deeply furred. There was general clouding of intellect, and the mental processes varied from simple slow cerebration to general apathy or, conversely, marked delirium. Usually there was no localized involvement of any particular organ, but haemorrhage from the bowels occurred in a number of cases. The most characteristic bacteriological feature was an abnormal rise in the titre of O agglutinins with no evidence of Vi antibody formation. In this series the O titre varied from 2,000 to as much as 20,000. Blood culture was usually positive during the first week, but no excretion of organisms could be detected in later stages. In cases which ended fatally this held true and the high titre of O agglutinins was maintained. On the other hand, in those who recovered, either naturally but more often through serological intervention, some remarkable changes took place in the bacteriological picture within as short a period as 24 hours. There was a sudden drop in O titre to normal proportions (200–500), with simultaneous appearance of Vi antibody accompanied by what may be termed a flooding of both urine and faeces with typhoid bacilli. The strains isolated were fully virulent, inagglutinable by an O serum, but easily clumped by a Vi serum with an a.l.d. of less than 100 millions—the V type of organism described by Kauffmann (1935).

4. *Prolonged Pyrexia (P.P.) Type.*—The duration of pyrexia in such cases varied from 6 to 12 weeks. During this prolonged course the temperature showed a tendency to drop to normal on more than one occasion; but these oscillations could be easily distinguished from true relapses in that the temperature did not stay at normal longer than from 24 to 48 hours. Such cases were usually free from complications, the only complaint being "fever" for which causes other than typhoid infection—especially *B. coli*, pyelitis, and pulmonary tuberculosis—were looked for with negative results. The diagnosis was easily established by a positive blood, urine, or faeces culture. The characteristic feature was either a complete absence or a very low titre of Vi antibody. So long as Vi titre did not improve, the fever continued. It was only when this antibody developed, either naturally or by artificial introduction into the system through serum therapy, that the host got the better of the parasite and infection terminated. The micro-organism isolated was easily agglutinable by both O and Vi sera with an a.l.d. of more than 100 millions.

5. *Embolic Type.*—The predominant feature of these cases was the abnormal localization of the infecting organism in one of the organs—chiefly lungs, meninges, or intestine—resulting in bronchopneumonia, specific meningitis, or a severe form of melaena respectively. The clinical picture is commonly referred to as complicated typhoid fever. The course of infection was unduly severe and the mortality heavy. There was no evidence that the condition was metastatic in origin, the term "embolic" being applied only for descriptive purposes. The infecting organism was isolated from the peripheral blood with ease not only in the early stage but also during the second and third weeks if the patient lived. There was considerable excretion of bacteria via both the kidneys and the intestine; and in certain cases the unusual picture of blood, urine, and faeces all being positive at the same time was encountered. Serological tests, on the other hand, were disappointing, there being complete absence of Vi antibody with little rise in O agglutinins. The strain of *Bact. typhosum* isolated was highly virulent, with an a.l.d. in the region of 60 to 80 millions, inagglutinable by an O serum but reacting to Vi antibody.

6. *Relapse Type.*—During the course of typhoid infection relapses occur in a certain percentage of cases. Clinically there are no means by which we can assess the possibility of such an event taking place. Laboratory investigations, however, suggested that certain unusual occurrences should arouse suspicion about the possibility of a relapse—namely: (*a*) a positive blood culture during the third week where previous cultures had proved sterile; (*b*) a positive blood culture with the temperature on the down grade; (*c*) a fall in the titre of Vi agglutinins in the third week without a similar simultaneous effect on temperature; and (*d*), conversely, the maintenance of a high Vi titre with temperature showing a normal tendency.

Discussion

To appreciate the prognostic significance of the variations in laboratory findings in different types of clinical manifestations of typhoid fever it is necessary to take into account the part played by Vi antibody in typhoid immunity as described by Felix and his co-workers—for references see Topley and Wilson (1936). In our experience the presence of this antibody in a sufficiently high titre (50–250) always connoted a satisfactory outlook. If this antibody was present early in the disease and the high titre was maintained over a number of days it could be predicted with confidence that the course of infection was going to be short and the patient on the road to convalescence by the third week. Such cases are included in the *simple type* of infection described. They formed a large component of a previous communication on the value of Vi agglutination in typhoid fever, to which reference has already been made.

We have no record of a case in this series in which a high Vi agglutinin titre was associated with such fulminating symptoms as are included under the *embolic type* of infection, although 73 cases of this nature were studied. The Vi antibody was either completely absent or, if detected, the reading was seldom higher than 10–20; even this low titre was not maintained, and it appeared only spasmodically. If the case was to end fatally there was no rise in Vi agglutinins. On the other hand, in the few cases that recovered naturally—only 4 out of 73 in this group—the improvement in the clinical condition was preceded by an elevation of Vi titre. In two of these, with lung involvement, Vi antibody developed suddenly and a high titre (80–160) was kept up for 11 days. The lung condition cleared and the patient recovered after prolonged convalescence. In the other two, with bowel haemorrhages, the Vi titre dropped from 160 to 20 within 3 days, with a concurrent fall of temperature to subnormal. Both these cases relapsed—on the fifth and the sixth day respectively, with one and two similar relapses subsequently—before a sustained Vi antibody titre was elaborated naturally and the infection was eventually overcome on the 79th and the 88th day of disease.

Study of the *prolonged pyrexia (P.P.) type* of infection lent further support to the role of Vi antibody in the pathogenesis of typhoid fever. Nineteen such cases were observed. Clinically, everything was in the patient's favour, especially his general condition and the freedom from complications. The fever, however, continued for weeks. It came to an end only when a sustained Vi titre was recorded, either produced naturally or provided by specific serum therapy.

An abnormal rise in O agglutinins was seen to be associated with the *toxic type* of case, the titre of this antibody in different cases varying from 2,000 to as much as 20,000. In none of the other types of typhoid fever cases was this high reading encountered, nor was it experienced in their treatment with either Felix or convalescent serum. In view of the high mortality in this group—15 out of 27 cases studied having proved fatal—and the fact that recovery was always preceded by a considerable drop in the O titre of serum, the high rise in O agglutinins must be considered to be pathological, since its prognostic interpretation is directly opposed both to the generally accepted clinical concept associating O antibody production with favourable prognosis and the immunological observation that the O titre of a serum expressed its protective value in relation to endotoxins. As all the cases were highly toxic the possibility of *abnormal* O-antibody production becoming associated in some unknown manner with toxin liberation, rather than being responsible for its neutralization, cannot be ruled out, although there is no experimental evidence to support this view. It will also be seen from the observations recorded that O antibody is not concerned in the excretion of typhoid bacilli from the human body, since none was found to take place while the high titre lasted.

Of the *ambulatory type* 32 cases were under review. All of them were characterized by: (1) absence of complete rest during the first week after the signs and symptoms associated with the early stage of typhoid fever had appeared; and (2) the employment of antipyretic drugs. Both these factors produced catastrophic results, our records showing 100%

mortality. It can therefore be assumed that complete rest and free play for the rise in temperature are of paramount importance in the second stage of typhoid infection—the first being the incubation period—and that interference by such drugs as aspirin, quinine, and those of the sulphapyridine group, etc., for any length of time, is likely to affect the prognosis adversely if *Bact. typhosum* happens to be the responsible organism.

True relapses were recorded in 18 cases—over 6% of the total series. In 10 of these there was one relapse, in 7 others it was repeated, and one case relapsed three times. While a high percentage of positive blood cultures was obtained during the relapse period (in 14 out of 18 cases), on six occasions cultures were positive before the relapse had taken place. In four of these the temperature was on the down grade and two previous blood cultures had proved sterile; in the remaining two, cultures were sterile after the temperature had stayed subnormal for 4 and 5 days respectively. In all but two cases Vi agglutinins had practically disappeared during the subnormal stage of temperature. In these two exceptions, however, the curious combination of subnormal temperature, positive blood culture, and a Vi titre of 40–80 was encountered. The case with three relapses started well in that Vi agglutinins appeared early—on the ninth day—and continued until the 22nd day. Then there was a sudden drop, with temperature still at 100.2° F. Although the subnormal stage was reached on the 25th day, it remained so for only 5 days, the temperature then rising, with two similar subsequent events. These observations would justify the assertion already made as to the possibility of a relapse in the presence of unusual laboratory findings. The practice of a blood culture and an agglutination test when the temperature shows a downward tendency should therefore be considered worth a trial during the later stages of typhoid infection.

Some Practical Points

Reference may now be made briefly to the application of observations discussed here from the prognostic and prophylactic points of view. In a case suspected clinically to be suffering from typhoid fever there is a tendency to assess the result of an agglutination test in terms of a positive or a negative Widal reaction, depending upon the titre of antibodies so detected. And, what is more important, a so-called negative Widal is taken to mean the exclusion of typhoid infection. From the present observations, and the experience of typhoid serology over a number of years, it cannot be too strongly emphasized that, in a case of remittent pyrexia, absence of Vi antibody or a lack of an appropriate rise in the titre of O agglutinins does not in any way exclude the possibility of the infection being typhoid in origin. It would therefore be better if the term "negative Widal" were entirely eliminated from typhoid terminology, since the meaning commonly attached to it leads to a sense of false security and indulgence in medication of a type likely to worsen the ultimate prognosis in the manner already pointed out.

The utility of Vi agglutination as a diagnostic measure has given rise to considerable differences of opinion. The present communication should throw some light on this problem. It will now be clear that an early rise in Vi agglutinins should be expected only in cases with mild symptomatology. Where complications have set in, a reasonably high Vi titre will be encountered only if and when the clinical tide turns in favour of the patient, and this Vi reading will persist at least for the next few days. In spite of observations to the contrary we have failed to discover this antibody as a natural agglutinin. Its presence had always been found to be associated with the existence of *Bact. typhosum* in the human body. Results to the contrary were mainly due to non-specific reactions likely to arise when suspensions of Vi I strain (Bhatnagar *et al.*, 1938), now employed almost universally for the purpose of Vi agglutination, had been preserved too long and the organism, either before or after the preparation of agglutinating suspensions, allowed to undergo S—→R variation.

From the prophylactic point of view attention has already been drawn to favourable prognosis in an individual who has had the benefit of multiple antityphoid inoculations over a number of years. Credit in such cases is usually given to the quality or type of vaccine employed. From a series of experiments on antibody production after T.A.B. inoculation in human beings it was pointed out a few years ago (Bhatnagar *et al.*, 1937) that protection against infection was best afforded by repetition at suitable intervals of stimuli given to the antibody-forming apparatus rather than by the quality or type of a single stimulus. The correctness of this view has now been confirmed by a change towards severity in the type of an average case of typhoid fever in military hospitals, due to a large influx of comparatively unprotected civilian personnel for military service and the drafts of non-tropical residents from over-seas, the majority of whom have had only one course of T.A.B. vaccine. It is the considered opinion that the practice of this prophylactic measure at shorter intervals during the first two years of military service in the Tropics—(*a*) on being called up, (*b*) on disembarking in a tropical country, and (*c*) subsequently at the end of 6 and 15 months—would result in a great improvement in the prognostic outlook in the event of actual typhoid infection.

Summary

A close association between prognostic outlook and the results of laboratory investigations has been found to exist from the analysis of 280 cases of typhoid fever.

The cases have been classified into 6 groups, each with varying clinical and bacteriological characteristics.

Observations showed that if Vi antibody was present early in typhoid fever in a sufficiently high titre (50–250), and this titre was maintained over a number of days, the course of the infection would most likely be short (*simple type*).

In the *embolic type*—in which the Vi antibody was either absent or seldom above 10 to 20—improvement was preceded by a rise in Vi titre.

The *prolonged pyrexia (P.P) type* resolved only when a sustained Vi titre was recorded. It must be stressed that, in the case of remittent fever, absence of Vi antibody or the lack of an appropriate rise in O agglutinins does not exclude the possibility of the affection being typhoid.

An abnormal rise in O agglutinins was observed in the *toxic type*, the titre varying from 2,000 to 20,000. Since a considerable fall in the O titre of serum always preceded recovery, the high rise of O agglutinins must be regarded as pathological.

In the *ambulatory type* complete rest and non-interference with the rise in temperature appear to be of the greatest importance in the second stage of the disease.

Relapses occurred in 6% of the whole series. Unusual laboratory findings appeared to be associated with the possibility of relapse.

An early rise in Vi agglutinins should be expected only in mild cases.

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R. Torpin (*Amer. J. Obstet. Gynec.*, 1943, **46**, 557), who records a personal case and has collected 27 others from the literature, states that spontaneous haematoma of the rectus abdominis muscle occurs in both white and negro women. Primary aetiological causes were trauma, cough, labour, strain, or, rarely, external injury. Other primary factors were, rarely, muscle degeneration from typhoid fever or influenza. Secondary aetiological influences were age, multiparity, and terminal stages of pregnancy. Conservative treatment consisted in early diagnosis, complete rest, and blood transfusion. The maternal mortality was 15% and the foetal much higher. Torpin's case was a negress aged 34, a 12-gravida; operation was performed without evacuation of the clot, and both mother and child lived.

TREATMENT OF OCULAR INFECTIONS WITH PENICILLIN

BY

G. T. WILLOUGHBY CASHELL, M.B., B.S.Lond., F.R.C.S.Ed.

Squadron Leader, R.A.F.; Ophthalmic Specialist, R.A.F.

The use of penicillin in ophthalmology has led to the rapid and successful treatment of many acute bacterial infections, and the risk of intraocular infection following injuries has been lessened. The following report of a series of cases treated with this drug at an R.A.F. hospital is presented in substantiation of these remarks.

Before giving details of the cases it is necessary to outline briefly: (1) the principles of the treatment; (2) the types of ocular infection suitable for treatment; (3) the methods of application and dosage; (4) the assessment of the results.

Principles of Treatment

Penicillin is admirably suited for surface application, and can be used in the form of drops in ophthalmic work. It is found that only small quantities need be employed: doses in the order of 1,000 units are sufficient to treat many cases. The drug has been used in the form of the calcium or sodium salt; both have been well tolerated in the eyes, and have been injected into the anterior chamber. It is known that penicillin is successful only when the primary infecting organism is sensitive to the drug in therapeutic concentration. It must also be capable of gaining access to the site of infection.

In the first place, organisms commonly found in ocular infections which are susceptible to the action of penicillin are *Staph. pyogenes*, the haemolytic streptococcus, the gonococcus, and the pneumococcus. Sensitivity to penicillin is not affected by a resistance to the action of sulphonamides. Sulphacetamide has been advocated for use in these infections. This drug has a negligible action against the staphylococcus, the commonest organism found in this series of ocular infections. Its action against the streptococcus is limited by pus, which contains antagonistic substances. On the other hand, penicillin in extremely low concentration completely inhibits the growth of both staphylococci and streptococci, and its action is in no way impaired by pus. Experiments during this survey also show that the organisms isolated from ocular infections—the bacillus of Petit and the Morax-Axenfeld bacillus—are insensitive to penicillin when tested *in vitro*.

In the second place, the eyelids, conjunctival sacs, corneae, and lacrimal sacs are ideal for the use of penicillin, as it can be applied with ease, and at the same time gains access to all parts of the ocular and palpebral conjunctivae, the lid margins, and the lacrimal sacs.

Types of Ocular Infection Suitable for Treatment

(*a*) Acute conjunctivitis and blepharitis, which react well to penicillin; the infections that are usually found to be due to *Staph. aureus*, streptococcus, or penumococcus, and are often associated with marginal keratitis and corneal ulceration. (*b*) Chronic blepharitis, usually due to *Staph. aureus*. (*c*) Infected corneal ulcers, either due to trauma or associated with the above conditions. (*d*) Perforating corneal injuries with prolapse of the iris and the risk of intraocular infection.

Methods of Application and Dosage

Penicillin can be used in the eye in the form either of drops or of ointment. Irrigation of the anterior chamber can be carried out with a solution of the drug in certain cases in which infection of that structure has taken place through a perforating wound. A dosage of penicillin drops, strength 500 (Oxford) units per c.cm., is efficacious. Penicillin is also of value as an ointment made up in a soft lanette wax base of 500 units per gramme. In acute cases, and in perforating wounds where infection is apparent within 24 hours of the injury, applications of penicillin should be made at half-hourly intervals for the first 24 hours. Thereafter the applications can be reduced to two-hourly and, later, four-hourly. From the cases quoted below it will be seen how rapidly ocular infections are rendered sterile. It is possible to save eyes which would otherwise undoubtedly have been lost from intraocular infection.

It must be remembered that penicillin loses its potency after keeping. It is necessary to store it carefully in a refrigerator, and it is advisable to have small quantities made up at a time. The solution should be freshly prepared every 14 days.

Assessment of Results

Control of the cases was done by clinical assessment of recovery and by cultures taken from the infected area. It was found essential to keep a close watch on the infection, and directly a case was seen cultures were taken from the lid margins, conjunctival sacs, or corneal surfaces, depending on the site of the infection. Ideally these cultures should be taken every 48 hours. They generally become sterile within 7 days.

Cases of Blepharitis

Case	Type of Discharge and Duration	Culture	Penicillin per Day (in Oxford Units)	Sterile in Days	Result
1	Watery; 12 mths.	Staph. pyo.	58	12	Lids clean
2	Crusting	,, ,,	130	13	Healed
3	Watery; 2 yrs.	,, ,,	40	10	Lids clean
4	Crusting; 2 mths.	,, ,,	40	12	Satis.
	Relapse 2 mths. later	,, ,,	40	14	Improved
5	Watery; 14 yrs.	Sterile	390	20	,,
6	Dry, 7 mths.	Staph. albus	1,800	10	Clear
7	Dry	,, ,,	1,560	10	,,
8	Serous; 5 yrs.	,, pyo.	1,560	13	Clean
9	Dry; 3 yrs.	,, ,,	420	13	,,
10	Scaly; 5 days	,, ,,	420	8	Clear
	(4 days treated with mercurochrome and argyrol—still Staph. pyo.)				
11	? 1 yr.	Staph. pyo.	58	14	Clear
12	Scaly; 3–4 yrs.	Sterile	174	7	Clean
13	Watery since childhood	,,	390	12	,,
14	Watery; 6 mths.	Staph. pyo.	420	14	,,
15	,, 5 mths.	,, albus	390	6	,,
16	,, 2 yrs.	,, pyo.	420	12	Sterile
17	Scaly; 1 yr.	,, ,,	420	6	Clean
18	Scaly since infancy	,, ,,	420	4	,,
19	,, ,, ,,	,, ,,	420	12	Sterile
20	Scaly since childhood	,, ,,	420	10	,,

In the cases of blepharitis the history varied from 5 days to 15 years; all had a typical watery discharge, with crusting of the lashes and redness and soreness of the lid margins. The cultures showed *Staph. pyogenes* in 15 cases and *Staph. albus* in 3 cases; no definite organisms were isolated from the remainder. The average number of units of penicillin used in each case per day was 560, given either twice or three times a day as drops made up in 500 units per c.cm. The average period to elapse before obtaining a sterile culture was 12 days, and at the end of that time discharge had ceased and the lids were clean and comfortable.

A relapse of the blepharitis occurred in 2 cases—Nos. 4 and 19. In Case 5 after 20 days' treatment the condition had only improved slightly; and here the history was that the infection had been present for 14 years. It is difficult to be dogmatic about the permanency of the results of treatment in these chronic cases without a very careful follow-up, but there is no doubt that in most of the cases the lid condition improved very markedly under treatment.

Cases of Acute Conjunctivitis

Case	Type of Discharge and Duration	Culture	Penicillin per Day (in Oxford Units)	Sterile in Days	Result
1	Watery; 3 mths.	Staph. pyo.	390	11	Clear
2	,, ,,	,, ,,	195	7	Eye white
3	Purulent; 11 days	Diphtheroids	40	11	,, ,,
4	Watery; 7 days	Staph. pyo.	130	12	,, ,,
5	,, since 1918	Diphtheroid; streptothrix	390	21	Improved
6	,, 5 days	Staph. pyo.	390	21	Clear
7	,, 3 mths.	,, ,,	130	7	Eye white
8	,, 6 yrs.	,, ,,	130	14	Sterile
9	,, 7 days	,, ,,	390	6	,,
10	Purulent; 3 days	,, ,,	390	4	,,

The history of the cases of acute conjunctivitis varied from 7 days to frequent acute relapses over a period of years.

Staph. pyogenes was present in 8 cases. The average number of units each case received per day was 190, and sterile cultures were obtained in 10 days; the eyes were white.

In this series there was no doubt about the dramatic improvement in the condition of the eyes under treatment. One case in particular—No. 9—may be cited. This man came in with a very severe infection of both eyes, superficial keratitis, extreme photophobia, and blepharospasm, and the weeping eyes caused a spreading infection of the skin of the lids, which eventually affected the whole of the face and down the neck. After 48 hours' treatment with penicillin the eyes could be opened without discomfort, the conjunctiva had become almost white, and the skin of the lids was clearing rapidly. Within a week the whole condition had subsided.

Cases of Corneal Ulcer

Case	Type of Discharge and Duration	Culture	Penicillin per Day (in Oxford Units)	Sterile in Days	Result
1	Watery; 7 days	B. of Petit	195	4	Healed
2	,, 13 ,,	Staph. pyo.	195	8	,,
3	,, 3 ,,	,, ,,	195	10	,,
4	,, 4 mths.	,, albus	195	12	,,
5	,, 1 mth.	,, pyo.	195	8	,,
6	,, 3 days	,, ,,	40	9	,,
7	Purulent; 4 mths.	,, ,,	130	18	,,
8	Watery; 7 days	,, ,,	195	4	,,
9	,, 5 wks.	,, ,,	195	12	,,
10	Purulent; 2 days	,, ,,	195	5	Sterile

The history varied from 3 days to 4 months. There were 8 cases of *Staph. pyogenes*, 1 of *Staph. albus*, and 1 of the bacillus of Petit. Cases were given 160 units per day, and were healed in 9 days. Ulceration of the cornea healed rapidly in most cases, and the associated conjunctival condition became clear within 48 hours of starting treatment. The case which grew the bacillus of Petit responded to treatment, although it has already been proved that the organism is insensitive to penicillin.

Cases of Perforating Injury

Case	Type of Discharge and Duration	Culture	Penicillin per Day (in Oxford Units)	Sterile in Days	Result
1	Purulent; perforation 3 days	Staph. pyo.	360	9	Panoph. (6 days later excision)
2	Purulent perforation 6 hours	,, ,,	600	4	Clean (cyclitis; excision)
3	Purulent; perforation 5 days	Staph. pyo.; diphtheroids	360	16	Clean (cyclitis; excision)
4	Perforation 12 hrs.; hypopyon	Staph. albus	130	17	Clean
5	Operation for cataracts; inspection 24 hours	Diphtheroids	360 (Irrigated AC)	33	Clear
6	Perforating injury; hypopyon	Staph. pyo.	600	4	Sterile
7	Burn of conjunctiva	,, ,,	360	4	Clean
8	Sulphuric acid burns	Str. haem.	360	4	Sterile
9	Perforating injury	Staph. pyo.	360	6	,,
10	Injury to R.E.; loss of eye with infected socket	,, ,,	130	4	,,
11	Superficial corneal abrasions	,, ,,	130	2	Clean
12	Orbital wound	,, ,,	130	3	,,
13	Infected stitches; dacryocystorhinostomy	,, ,,	130	3	,,
14	Rupture of cornea	,, ,,	100	4	,,

In each case there was considerable infection of the cornea, with acute conjunctivitis; but, with penicillin, panophthalmitis was avoided in 5 cases out of 6. The organisms again were *Staph. pyogenes* in the majority of cases, and the conjunctival sac in each instance was made sterile in an average of 10 days. However, 3 cases required excision later owing to a chronic cyclitis.

There is no doubt that infected wounds which involve the eye, the orbit, or the lids react well to penicillin. Of these cases of perforating injury Case 1 was not available for treatment until 3 days after the injury, and intraocular infection had already started. Cases 2 and 3 had definite infections of the anterior chamber, which cleared up with penicillin, although chronic cyclitis supervened. Cases 4, 5, and 6 all had hypopyon, which also disappeared under penicillin treatment. Case 8 was interesting, as to prevent symblepharon in the lower fornix a contact lens was made, and before this was fitted an acute streptococcal infection of the conjunctiva was completely controlled within 4 days. Irrigation of the anterior chamber was carried out in Cases 5 and 6, and these eyes would undoubtedly have been lost from panophthalmitis.

Cases of Dacryocystitis

Case	Type of Discharge and Duration	Culture	Penicillin per Day (in Oxford Units)	Sterile in Days	Result
1	Purulent; 3 years	Pneumococci; diphtheroids	420	9	Clean
2	Muco-purulent	Diphtheroids	420	7	,,
3	Purulent	Pneumococci	420	5	Sterile

The 3 cases of dacryocystitis responded rapidly to treatment, and a sterile, clean lacrimal sac was noted within 5 to 9 days in each case. The infection was pneumococcal in 2 of the cases, and dacryocystorhinostomy was successfully performed in each instance, with clean healing wounds.

Treatment

It has been suggested that with a standard solution of 500 units per c.cm. the following dosage is adequate in the types of infection indicated:

Blepharitis.—One drop in each eye three times a day.

Acute Conjunctivitis.—One drop in the affected eye 4-hourly during the acute stage; later, three times a day.

Corneal Ulceration.—One drop in the ulcerated eye 4-hourly until clean; later, three times a day.

Perforating Injuries.—One drop in the injured eye half-hourly during the first 24 hours, and, if possible, instillation into the anterior chamber.

Treatment should be continued for 7 days after the first negative swab, or after clinical evidence of cure, in order to prevent relapse.

Summary and Conclusions

An attempt has been made to indicate the type of ophthalmic case that is suitable for treatment with penicillin and the dosage of the drug required. The following points arise from the investigation:

1. Penicillin holds a very important place in the treatment of ocular infections.

2. Compared with the dosages required in other branches of medicine and surgery, the amount necessary for the adequate treatment of all acute ocular infections in an ophthalmic unit is small.

3. It is effective against *Staph. aureus*, the haemolytic streptococcus, the pneumococcus, and the gonococcus.

4. It can be used in the form of drops or ointment, the best strength being 500 units per c.cm. Frequent applications are required in the initial stages of treatment. Experience has shown that treatment with drops is efficacious, and, on the whole, the drug is easier to apply by this means.

My best thanks are due to Group Capt. W. E. Barnes for his help and encouragement; to Prof. Florey and the Medical Research Council for the supplies of penicillin; and to Flight Lieut. Bodenham for his assistance in the treatment and his advice as to dosage.

Salaries of £65 a year rising by annual increments of £5 to £95 for assistant nurses and of £35 to £40 a year for probationers in non-training hospitals are recommended in the third report of the Taylor Committee on salaries of nurses in Scotland. Part I deals with salaries of those nurses not covered in the two earlier reports, including nurses on the new State list who receive the same as State-registered nurses; nurses above the grade of charge nurse in mental hospitals, who will have scales generally comparable with those in general hospitals; nurses in public assistance institutions and convalescent homes; cottage nurses; and orthopaedic nurses. Part II fills in certain gaps and amplifies or modifies scales for nurses in general, fever, children's, and maternity hospitals, in the domiciliary midwifery service, the public health service, and the district nursing service. Part III clears up some doubtful points of the earlier reports. The only matters now outstanding are superannuation, and salaries and conditions for nurses, up to the grade of charge nurse, in mental hospitals.

CONTROL OF VERY SEVERE DIABETES BY A NEW ARRANGEMENT OF INSULINS

BY

R. D. LAWRENCE, M.D., F.R.C.P.

AND

WILFRID OAKLEY, M.D., F.R.C.P.

(The Diabetic Department, King's College Hospital)

Some cases of diabetes are so severe and so very difficult to control that it may be useful to describe a new method of treatment which we have found successful in many such cases in the past few years. We do not use "control" in the purist's sense of keeping the blood sugar normal and the urine sugar-free throughout the 24 hours, but merely of preventing the phases of intense glycosuria and ketonuria which occur daily when this type of case is treated along conventional lines. It is true that these phases are usually quite short, but, in the event of complications such as acute infection or gastro-intestinal disturbance with vomiting, they may act as the starting-point of a more prolonged and serious relapse; this is particularly true of pregnant diabetics, in whom the tendency to ketosis is so often accentuated by a lowered renal threshold. It is also possible that these phases may, if sufficiently prolonged, be responsible for failure of growth and development in some children, whose instability is such as to make control by ordinary methods impossible.

Undoubtedly the best and most economical way of treating these very severe diabetics is with multiple injections of soluble insulin at four- or six-hourly intervals; but this is not practicable except over short periods of emergency, and we aim at the routine use of not more than two daily injections. The depot insulins, particularly P.Z.I., have made this possible in most, but not the exceptionally severe, cases. These require such high concentrations of insulin that protamine insulin with its slow absorption is almost useless, as it never liberates enough circulating insulin to be effective. In treating these very severe diabetics, therefore, we rely on soluble insulin to control the hyperglycaemia resulting from ingested carbohydrate, and use P.Z.I. to prevent, if possible, relapse due to endogenous sugar formation, particularly by night. In practice we arrange the insulin therapy for our severe cases in one of the following ways:

Mixed Dose of Soluble Insulin and P.Z.I. in the Morning before Breakfast

This is the most convenient method, but is suitable chiefly for those moderately severe cases which neither require large doses of insulin nor relapse seriously when the soluble insulin has ceased to act and the patient depends on P.Z.I. alone—namely, in the late afternoon, night, and early morning. Heavy glycosuria is common after the evening meal on this regime, but is usually of short duration and no clinical importance. Both insulins are given together in the same syringe and the correct proportions worked out for each case, the dose of soluble insulin being usually larger than that of P.Z.I. to allow for the precipitation of some of the former by the excess protamine present in the latter. In very severe cases, however, this method may completely fail to control the diabetes, hyperglycaemia being persistently present, with heavy

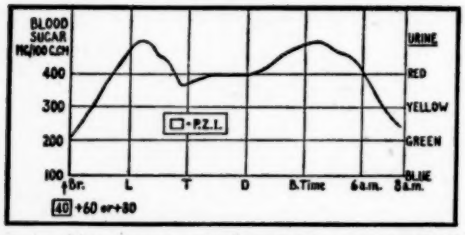

FIG. 1.—Very severe case (temporary or permanent).

glycosuria and ketosis in the morning and possibly also at night. The P.Z.I. appears only to detract from the action of the soluble insulin without exerting much effective action of its own (see Fig. 1).

Mixed Dose of Soluble Insulin and P.Z.I. before Breakfast and Soluble Insulin before Dinner or Supper

This arrangement probably gives the best control possible by two injections in the majority of severe cases. The addition of a small injection of soluble insulin towards the end of the day prevents the evening relapse, and we think is best given, if possible, at about 5 or 6 p.m., so that its action may be nearly over before bedtime. This timing of injections is particularly suitable for children and others who combine their tea and evening meal. While this method is an undoubted improvement on the first for very severe cases, it may fail for the same reasons. The evening soluble insulin may prevent heavy nocturnal glycosuria and frequency, but does not act long enough to prevent a relapse by the morning, after which hyperglycaemia again tends to persist throughout the day (see Fig. 2). One advantage of this method is that the need

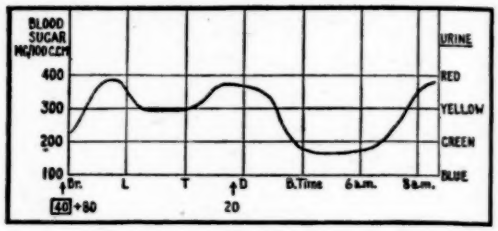

FIG. 2

for an evening dose may be only temporary and it can be stopped later without an entire rearrangement of the treatment.

Morning and Evening Injections of Soluble Insulin

In spite of the many advantages of depot insulin this method remains a most satisfactory one in many severe diabetics. Its advantages are simplicity and adaptability, which make it particularly suitable for those whose activities and meals are apt to be irregular. Again, however, in very severe cases, and especially those who are highly insulin-sensitive, this method is liable to fail on account of its tendency to produce a swinging blood sugar and, unless large buffer meals are included in the diet, severe hypoglycaemic reactions alternating with periods of intense hyperglycaemia and ketosis. This tendency constitutes a particular problem at night, when the danger of nocturnal hypoglycaemia can only be avoided at the cost of a very high fasting blood sugar, often accompanied by heavy ketosis in the morning (Fig. 3). It was in an endeavour

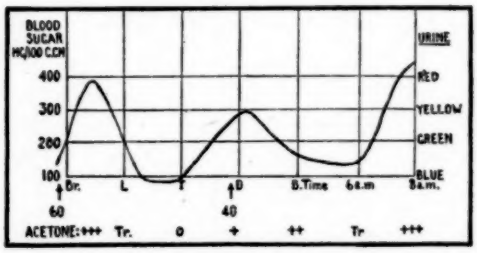

FIG. 3

to overcome this serious drawback to the use of two injections of soluble insulin in severe diabetics that we decided to try a new arrangement of soluble insulin and P.Z.I.

Morning Soluble and Evening Mixed Soluble and P.Z.I.

This method has certain advantages, both in theory and in practical effects, over those already described. The use of soluble insulin alone in the morning gives a strong rapid insulin action at a time when it is chiefly needed, whereas when given with P.Z.I. a certain proportion of the soluble insulin is converted into protamine insulin, necessitating a considerably larger dose of soluble to produce the same prompt effect. If this is remembered, together with the fact that P.Z.I. may be almost without effective action in some severe cases, it will be seen that enormous mixed doses may be given in the morning to such cases with no greater benefit

than may result from a comparatively small dose of soluble insulin given alone. We have demonstrated the truth of this observation in a number of our cases by withdrawing suddenly from the morning mixed dose all the P.Z.I., amounting to 30 or 40 units or more, the only result being a lowering of the noon blood sugar. Such cases are exceptional, but their existence should be remembered whenever very large doses of P.Z.I. appear to be having little or no action.

The use of a mixed dose at night might in theory be expected to prevent a high fasting blood sugar and morning ketosis, and also possibly to exert some mild hypoglycaemic action on the following day, especially before meals. The only real danger would appear to be the possibility of nocturnal hypoglycaemia, and, to avoid this, the dose of P.Z.I. should be kept relatively low and always less than that of the soluble insulin given with it.

Experience of this method of treatment in some 100 cases of the very severe type, all of which had high fasting blood sugars and morning ketosis on other regimes, has confirmed, in our opinion, the theoretical advantages put forward, and convinced us that the addition of a small dose of P.Z.I. to the evening injection of soluble insulin does in fact result in the lowering of the fasting blood sugar, with consequent decrease in morning insulin requirement, and disappearance of ketone bodies from the early morning specimen of urine (Fig. 4). Treatment along these lines has been particularly

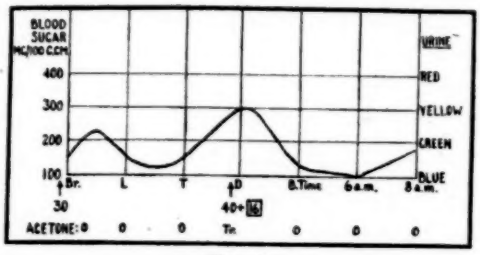

FIG. 4

successful in pregnant diabetics, several of whom have asked to continue on an evening mixed dose after delivery.

We have also had good results in a number of children, but, although we have seen little or no nocturnal hypoglycaemia in any of the cases so treated, we feel that particular care should be taken to avoid this in children by using the smallest effective evening dose of P.Z.I. and always giving an adequate bedtime feed. We have tried similar small doses of P.Z.I. with the morning soluble insulin to try to prevent relapse in the late afternoon, but with less success.

Medical Memoranda

Traumatic Perforation of the Appendix

Perforation of the appendix is common enough in itself, but when due solely to trauma is very unusual. Such a case was seen recently, and is considered worth recording.

CASE HISTORY

A Canadian soldier aged 20 was admitted to hospital at 11 a.m. on Nov. 9, 1942, with the following history. At 8 a.m. he had been crushed between a wall and a slowly moving lorry, his abdomen, more particularly the upper part, bearing the brunt of the injury. He did not lose consciousness, but complained immediately of abdominal pain, mainly epigastric.

On examination the patient was seen to be a well-developed, robust young man. His colour was good, but he complained of abdominal pain, especially in the upper abdomen. There was neither nausea nor vomiting; no food had been taken since the accident, nor had morphine been administered. His temperature was 98°, pulse 80, and respirations 20. The abdomen showed no signs of contusion or any abrasions and moved fairly well on respiration. There was diffuse tenderness, but of only moderate degree and most marked in the epigastrium. An equally diffuse, but slight, degree of muscle-guarding was present, but no true rigidity. Release tenderness could be elicited to a slight degree over the whole abdomen. There was no evidence of free fluid in the peritoneum, liver dullness was unimpaired, while peristaltic sounds were exceptionally prominent; no shoulder-tip pain was felt. Rectal examination revealed nothing; neither did clinical examination of the chest. There was no bony tenderness or any other sign of a fracture. A provisional diagnosis of contused abdominal wall was made and a conservative attitude adopted.

One hour later the pulse was 60 and of very good volume, but otherwise the patient's condition was unchanged. During the afternoon the pulse rose gradually until it reached 80 by 5 p.m. He was also complaining of hypogastric pain, apparently due to a full bladder, no urine having been voided since the accident. A catheter was passed easily, and a specimen of normal urine was obtained, showing there was no lesion of the urinary tract. Still no change was observed in the abdominal signs, but the rising pulse—the volume not quite so good as at first—was causing some anxiety, so it was decided to explore the abdomen unless the clinical condition showed a marked improvement in the next hour or so. No improvement occurred, and at 7 p.m. the temperature rose suddenly to 101°.

At 8 p.m. a laparotomy was begun under gas-oxygen-ether anaesthesia. A right paramedian incision was employed; no blood or intestinal contents could be seen in the peritoneal cavity. On the small intestine were numerous abrasions where the serous covering had been injured, but there were no perforations or any evidence of loss of vitality. A tear 3 in. long was found in the mesentery at the ileo-caecal junction. It was at right angles to the gut, but produced no visible effect on it; one fairly large artery had been torn across, without haemorrhage at the time of injury, though some occurred while manipulating the bowel. The artery was tied and the rent in the mesentery sutured. At this stage a detached appendix epiploica and a small piece of faecal matter were found in the pelvis. Examination revealed that the perforation of the large bowel was confined to the tip of the appendix, while the appendix epiploica appeared to be from the pelvic colon.

The appendix itself was about 5 in. long, very mobile—being actually discovered just above the pelvic brim—and devoid of any sign of inflammation. At the tip was an irregular perforation about 1/3 in. in length. Treatment presented no problems and the appendix was removed in the usual way. The abdomen was closed and a rubber dam drain left in the peritoneum for 48 hours.

Intravenous saline was started, 1/4 gr. of morphine was given 6-hourly, and a Ryle tube was placed in the stomach and aspirated every hour. Soluble sulphapyridine was given intravenously—2 g. followed by 1 g. 4-hourly for 72 hours.

During the first few days after the operation the abdomen was distended and very silent, suggesting that there was some peritoneal inflammation, which was not unexpected. Thereafter a mass developed in the pelvis, but this resolved without surgical intervention, and the patient made slow but steady progress, being discharged to a convalescent home 6 weeks after the operation.

DISCUSSION

Since the days when acute appendicitis became common the position of trauma as an aetiological factor has constantly been under review. It was first thought that trauma never caused acute appendicitis, but it is gradually being accepted that it may occasionally bring on an attack. As Maes and McFetridge (1935) wrote, the exact mechanism of traumatic appendicitis has never been satisfactorily established. There is no previous case on record of rupture or even bruising of the appendix. It had also never been scientifically proved, operation usually not being early enough to detect evidence of trauma before obliteration by inflammation. Ludington in 1923 described acute appendicitis in a girl aged 10, with rupture of all anatomical coats in an appendix distal to an adhesion, 30 hours after a fall. McCarthy and Magrath in 1938 reported two cases in which the appendix and mesentery were torn away from the caecum.

The case recorded above may shed some light on the controversy, as the appendix was free from previous disease and uninflamed, and the rupture was obviously due to trauma. This injury, or one in which the coats are damaged and not ruptured, could produce a spreading inflammation of the appendix. The case also proves conclusively that the appendix can be injured without serious damage to any other viscus.

I wish to thank Col. J. M. Elliott, Army Medical Services, for permission to publish this case.

A. F. WILLIAMS, M.B., F.R.C.S.,
Capt., R.A.M.C.

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R. A. Palmer and H. S. Mitchell (*Canad. med. Ass. J.*, 1943, **49**, 465) record two cases of march haemoglobinuria in soldiers aged 19 and 21. Its pathogenesis is still unknown, but they suggest that the paroxysms are not due to increased haemolysis but to some unknown abnormality present during erect exertion interfering with the clearing from the plasma of the haemoglobin liberated in the normal destruction of senile erythrocytes.

Reviews

ENDOCRINOLOGY OF CHILDHOOD

Endocrine Disorders in Childhood and Adolescence. By H. S. Le Marquand, M.D., M.R.C.P., and F. H. W. Tozer, M.D., M.R.C.P. (Pp. 298; illustrated. 15s.) London: Hodder and Stoughton. 1943.

How recent is the interest taken in the endocrinology of childhood is shown by the fact that neither the word "pituitary" nor "endocrine" appears in the index of the 1924 edition of a well-known textbook of children's diseases. Yet the endocrine system asserts itself before birth and is actively concerned with growth—the conspicuous feature of early life. We welcome, therefore, this book on *Endocrine Disorders in Childhood and Adolescence*, by Dr. H. S. Le Marquand and Dr. F. W. Tozer, as a valuable contribution to the subject. They have assimilated the literature and tested the conclusions thereof in the light of their own clinical observations. Like most recent observers, they are increasingly struck by the predominant role of the pituitary and its close association with the hypothalamic centres. Yet they find that pituitary disorders, though relatively common, are often unrecognized. Valuable evidence may be obtained by seeing other members of the family, and they are impressed with the frequency with which "problem children" present minor stigmata of endocrine imbalance. The complexity of conditions arising can only be attributed to a dissociation of pituitary functions, and in the chapter on the physiology of the endocrine system the vexed question is discussed whether each of these manifold functions has its own specific hormone, or whether (as Collip believes) there are not more than three hormones, modified as required by the needs of the body. That these tiny glands containing only three types of cells should elaborate at least eleven specific substances, some of which, such as the lactogenic, may never function throughout life, seems highly improbable. The work of the organic chemist showing what profound changes in action may result from slight changes in chemical constitution certainly adds point to Collip's view. The close interrelation between all the endocrine glands is insisted on, which is particularly obvious in the case of the pituitary and the gonads. The descriptions of the various clinical syndromes are lucid, and the discussions of them maintain a nice balance between dogmatism and scepticism. A number of photographs illustrate some of the cases under the care of the authors, and a useful table of the commercial preparations of sex hormones is appended.

Although the psychological basis of anorexia nervosa as distinct from organic defects in the anterior pituitary is realized, the advocacy of energetic endocrine treatment, if evidence of hypogonadism be found, may tempt some practitioners to carry it out to the neglect of the more troublesome and delicate but essential psychological factor. This is the only criticism we have to make of an admirable account of endocrine disorders in early life and one which imparts much information in a reasonable compass.

X-RAY DIAGNOSIS

Outline of Roentgen Diagnosis. By Leo G. Rigler, B.S., M.D. Second edition. (Pp. 196; illustrated. 40s.) London: J. B. Lippincott Company. 1943.

The second edition of Leo G. Rigler's *Outline of Roentgen Diagnosis* is, like the first, based on lecture notes prepared by him for undergraduate teaching. These notes, revised, expanded, and now published in book form, are designed, according to the preface, "as a supplement to diagnostic lectures to undergraduates, as a text in teaching extension courses to general practitioners, as a study outline for graduate students, and, by radiologists, as a synopsis for lectures." It is, in effect, a synopsis of *x*-ray diagnosis, and exhibits both the virtues (if there be virtues) and the faults of such works. The text occupies 196 pages; the illustrations—227 in all—are grouped in a series of plates at the end. In conformity with the object of the book, radiographic technique has been omitted.

The text is well arranged, but tends too much to be a catalogue of *x*-ray signs, and fails, like most synopses, to assess the value of the sign, or to indicate its significance in relation to the pathological process or disturbance of function. There are a number of errors and omissions in the text—for example, the statement that in the female the fifth lumbar vertebra rises high above the crest of the *sacrum*; even correcting the *lapsus calami* this is not true. Again, the author states that "the [*x*-ray] diagnosis of either acute or chronic mastoiditis can be made with great certainty, especially if it is one-sided"—an enthusiastic claim, to say the least of it. In discussing the position of a Colles's fracture no mention is made of the inclination of the radial articular surface in the lateral view, and in describing the signs of acute maxillary sinusitis the fluid level is omitted. In atelectasis of the lower lobe of the lung the retrocardiac triangular shadow is not mentioned, nor is any account given of the signs of atelectasis in the other lobes. An unhappy word, "radiability," is used throughout the book when describing the translucency of a structure to *x* rays. If it means anything the word would indicate the capacity of the structure to radiate.

The half-tone illustrations of radiographs are of good quality and well chosen to illustrate the commoner conditions. The line diagrams are excellent. Mention should be made of a novel feature in the illustrations of bone lesions drawn by Miss Hersch. These are very successful in combining in one drawing the salient features of the lesions illustrated.

While this book is too compressed to be of much value to the real student of radiodiagnosis it may commend itself to those undergraduates who require a concise outline of a large subject. Of itself it may fail to give them the most essential feature—a real perspective of the subject.

APPLIED CHEMISTRY

Thorpe's Dictionary of Applied Chemistry. By the late Jocelyn Field Thorpe, D.Sc., F.R.S., and M. A. Whiteley, D.Sc. Fourth edition, revised and enlarged. Vol. VI; with an index to Vols. I to VI by Dr. J. N. Goldsmith. (Pp. 611. 80s.) London: Longmans, Green and Co. 1943.

A full appraisal of *Thorpe's Dictionary of Applied Chemistry* would call for its review in many different aspects. Under the title of helium, for example, there is found first a detailed history, with an account of its geographical distribution; next there is what amounts to a treatise on low-temperature physics, with data relating to the remarkable properties and behaviour manifested in the neighbourhood of absolute zero; and in a calendar of general information we are given an account of the uses of helium—among which is its increasing medical application. In certain types of respiratory obstruction it is found that a mixture of helium and oxygen is easier to breathe than the corresponding nitrogen mixture and diminishes muscular effort. The same mixture is advantageous as a supply to divers, reducing the liability to "divers' bends." This monograph on helium is descriptive of the pattern of all. The range of subjects covered by Thorpe's dictionary is extensive and includes a great diversity of kind. An instance of this diversity is shown by the appearance of a monograph describing the practice of dyeing human hair and explaining the chemical nature and action of the dyes used for the purpose. There are monographs on the ideal or perfect gas, on interatomic distances, and on high-pressure reactions. The diversity of subjects is matched by the diversity of authorship of the monographs. As the sources of authoritative knowledge the names of more than sixty well-known scientists appear in the list of contributors to the pages of this volume.

The dictionary is a credit to the contributors, to the editors and others engaged in its production, and is worthy of the place it fills in English chemical literature.

Notes on Books

The Handbook of Tropical Medicine, by Drs. ALFRED C. REED and J. C. GEIGER (Oxford University Press; 9s. 6d.) is small enough to be carried conveniently in the pocket. It differs from the usual run of books on tropical medicine in that it confines itself almost entirely to the clinical features of tropical diseases, their diagnosis, treatment, and prevention. There are no lengthy descriptions of the life-histories of the parasites concerned, nor are there any illustrations. The little book is essentially one for the clinician, who is given all essential information for the handling and treatment of his cases. It is well written and remarkably free from inaccuracies, and it deals with all the important tropical diseases,

which it is unnecessary to enumerate here. Anyone going to the Tropics or having to handle patients from the Tropics cannot do better than arm himself with this admirable little book.

Two articles from the *Approved Schools Gazette* have been reprinted in pamphlet form: one is entitled "Nocturnal Enuresis in Institutions for Children," by Dr. A. H. Norris, ex-chief inspector, Children's Branch, Home Office; and the other is a short addendum by Dr. A. E. Carver, psychiatrist-in-charge, Nuneaton Child Guidance Clinic. Dr. Norris suggests that any medical man applying to the Chief Inspector, Children's Branch, Home Office, Whitehall, S.W., would be sent a copy. His object in writing the article was to give workers in residential schools some guidance for helping the child on sound and safe lines. The advice is based on long experience of children in hospitals or sanatoria, while working as the medical officer of an education committee, and particularly through visits paid to several hundred residential schools and homes for children.

The Child Welfare Department of University College Hospital, London, has prepared a leaflet, *The Care of Your New Baby*, for mothers to take home with them when they leave hospital with their babies. It is not intended as a substitute for regular attendance at the local child welfare centre. Copies (price 2d.) can be obtained from the Secretary, University College Hospital, Gower Street, W.C.1, or from H. K. Lewis and Co., 136, Gower Street.

Preparations and Appliances

INTRAVENOUS ANAESTHESIA BY GRAVITY-FEED APPARATUS

Dr. J. L. GRIFFIN, honorary anaesthetist, Taunton Hospital, writes:

When intravenous anaesthesia was first introduced it was hailed as the coming anaesthetic, but since the technique of administration was imperfect, fatalities occurred, and it came to be considered dangerous for any but short operations in the healthy young adult. This was largely due to two causes: (1) administration by the inexperienced with frequently no means of resuscitation at hand; (2) the thoroughly bad practice of giving a large pre-judged dose of the drug rapidly in order to obtain deep anaesthesia for a short period.

Intravenous anaesthesia is now becoming more widely used every day for major as well as minor surgery, including cases previously thought unsuitable. Its chief advantages are: *To the Surgeon*—(1) quiet respiration, (2) efficient relaxation, (3) less haemorrhage; *To the Anaesthetist*—(1) rapid induction, (2) absence of second-stage complications, (3) a relaxed jaw and fewer difficulties with the air-way in consequence, (4) a slow, steady pulse rate with only a slight fall in blood pressure; *To the Patient*—(1) no mask over the face, (2) a rapid black-out, (3) post-operative vomiting rare, (4) an awakening as from natural sleep. If it can be given in carefully graduated doses throughout the operation—supplemented if required with gas-and-oxygen—it approaches the ideal.

Below is a description and illustration of an apparatus for its continuous administration, with saline (in use at Taunton Hospital), which I hope will be of interest to anaesthetists.

The Apparatus

It may be conveniently described in two parts: (1) A metal upright tube which is fastened to the left rear leg of the table Boyle's or other anaesthetic trolley. This carries a fibre panel which is adjustable to height and distance from the upright, enabling it to be placed over either the table or the patient's arm. The panel supports spring holders for the funnels and large fine-adjustment screw-clips (Baird and Tatlock). It has also a three-legged stand for use where there is no convenient table. (2) The sterilizable part of the apparatus, which consists of two graduated glass funnels (Allen and Hanburys) with bakelite covers, one to hold 300 c.cm. saline and the other 40 c.cm. of the anaesthetic solution. The rubber tubes leading from these funnels pass through the screw-clips and are joined by a glass U-tube to a single drip the lower end of which is tapered to take the fine-bore tubing (2 mm.) which leads in turn to a fine glass indicator and intravenous needle.

Technique

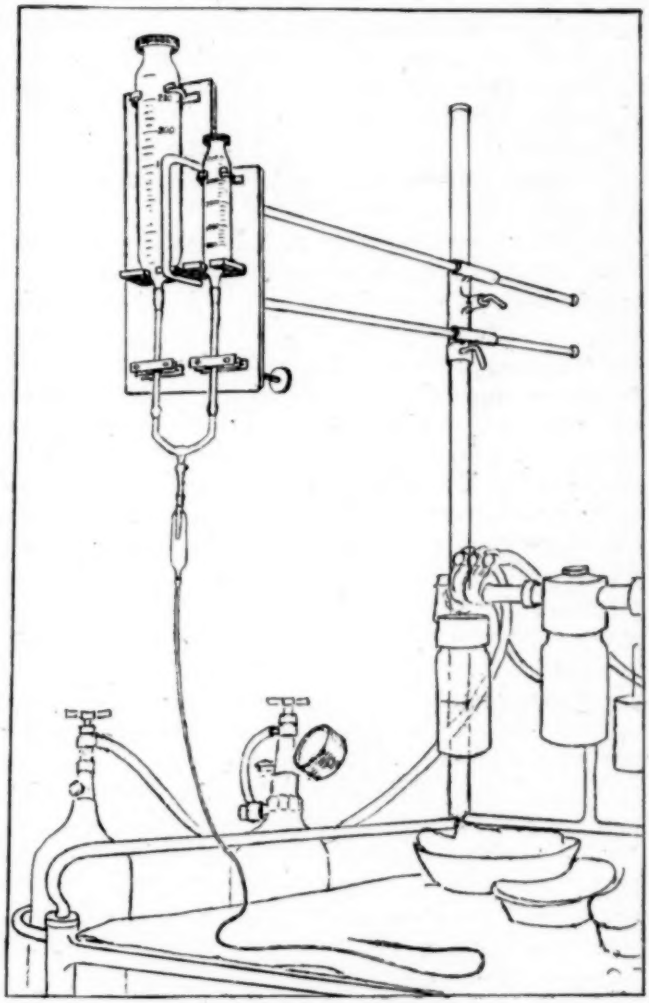
The patient, if an adult, receives 2 oz. glucose in water three hours before operation, 1/3 gr. omnopon plus 1/150 gr. scopolamine one hour before. This reduces any toxic effect and also the total dose required—e.g., an operation, fascial repair of obturator hernia, lasting 2½ hours, required only 1½ g. pentothal.

The glass and tubing parts, having been assembled and sterilized in a small partitioned bag, are attached to the panel. A sterile towel is placed on the table with the usual equipment for preparing the anaesthetic solution (usually 40 c.cm. of a 2½% solution of pentothal with 3 c.cm. of coramine). The funnels having been filled, the screw-clip on the saline tube is turned on to expel the air and fill the fine-bore tubing, and then turned off. The clip on the anaesthetic tube is then turned on and off to ensure its subsequent smooth working.

The patient's right arm is secured to a splint and an aneroid type sphygmomanometer used, first to check blood pressure, then to make the veins prominent. This is preferable to a bandage or tubing, as correct pressure can be maintained until the needle is shown by the glass indicator to be in the vein.

The saline is started, the arm pressure released, and the needle strapped by adhesive tape to the arm. The anaesthetic solution is given in doses as follows:

The saline is turned off, the anaesthetic turned on, and the drip and graduations watched until the required amount has been given. The anaesthetic is then turned off and the saline recommenced. This avoids any backwash or tendency to levelling of the fluids in the funnels if both were turned on together.



Advantages of the Apparatus

1. It forms a single stable unit with the Boyle's, and is in no one's way.

2. It obviates the need for an assistant to hold the jaw and leaves the anaesthetist free to give gas-and-oxygen and the necessary doses of the intravenous anaesthetic simultaneously.

3. Because of the fine-bore tubing and tapered drip the dead space is reduced to 3 c.cm. and the effect of each dose is obtained in about 50 seconds, giving minute-to-minute controllability.

4. The administration of saline and coramine intravenously minimizes the slight fall in blood pressure. Plasma may be given later through the same needle (No. 1 hypodermic, short bevel).

5. There is no loss of time between cases, or waste of anaesthetic, as the apparatus may be used throughout an operating session; all that is necessary is to change the fine tubing, indicator, and needle between cases. Sets of these may be ready sterilized.

6. With such a gravity-fed apparatus there is no risk of air or oxygen embolism as there may be with a pressure-fed apparatus.

I am greatly indebted to Mr. Hassan (motor engineer), who kindly constructed the metal parts, and to M. Muers, Ph.D., who designed the glass and tubing.

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THE WHITE PAPER DEBATE

The scanty attendance in the House of Commons during the debate on the White Paper last week was, we believe, a measure of the general lack of interest in the country as a whole in a matter which concerns it profoundly. The facts that Left-wing speakers commended the White Paper and determined to resist any attempt to whittle it down, and that Conservative speakers offered to support doctors in their opposition to some of the proposals in the Paper, clearly showed that the political drift was in the direction of socialization of medicine, and confirmed the tentative deductions made in these columns a week after the Paper was published. Although the political implications of the White Paper are those which are likely to arouse distrust in what is probably a predominantly conservative profession, doctors must take into account the generally favourable reception given by members of all parties in both Houses of Parliament to the present proposals for a comprehensive medical service. The more moderate organs of the Press, too, have welcomed the White Paper as embodying statesmanlike proposals for the reform of medicine. For example, the *Times* observes: "It is also necessary for all parties and interests to face the fundamental truth that, if the needs of the community are to be met, medical resources of all kinds, including general practitioners and specialists, must be available to different areas and different individuals according to their medical requirements and not according to their purchasing power. . . . No fair distribution of skill and resources is possible without some form of public planning. . . ." So if we may judge from the reactions of the Press and of Parliament the medical profession will get little public sympathy for any root-and-branch resistance to the White Paper proposals as a whole. There is, however, full recognition of the need for discussion on detail, and, we believe, a readiness on the part of Parliament to listen attentively to expert medical opinion on the many aspects of a contemplated legislative measure which, while not necessarily changing the face of medicine, bids fair to put a new and different complexion on it.

Mr. Willink, Minister of Health, said that the White Paper was built round four main principles which the Government believed to be fundamental: (1) comprehensiveness: (2) the freedom of the individual (no dragooning of patient or doctor into the service; (3) democratic responsibility—i.e., responsibility for the service to rest centrally and locally with the elected representatives; (4) the principle of professional and vocational guidance. Among the main features of the actual organization he stressed the principle of free choice of doctor (subsequently ridiculed by many of the Left-wing speakers); a desire to avoid regimentation; no intention on the part of the Government to establish "a fully salaried State Medical Service"; no prohibition of private practice; apprenticeship for young doctors first entering on general practice; rationalization of the hospital services; and, lastly, "we have no doubt that the foundation of this scheme should be in local government." Mr. Willink was at pains to remove the profession's natural apprehensions about the meaning of the sentence at page 35 of the White Paper, which runs as follows: "The Board must also be able to require the young doctor during the early years of his career to give his full time to the public service where the needs of the service require this." One misapprehension arose from the fact that in the shorter version the word "when" appeared instead of the word "where"; it should read "where" in both places. Mr. Willink then proposed an alternative phraseology, as follows: "The Board must also be able to require a young doctor entering the public service to give his full time to that service during the early years of his career in cases where the needs of the service require this." On the second day of the debate the Parliamentary Secretary to the Ministry of Health, Miss Horsbrugh, carried clarification a stage further by pointing out that it might not be possible for a young man to do part-time private and part-time public practice in a certain area; but this would not prevent his applying for such part-time work in other parts of the country. She instanced Mr. Willink's case of the young doctor wanting to work in Wakefield. His application for part-time work might be met thus: "We are short of doctors in Wakefield; therefore we must ask you to do full-time public practice. If you do not want to do full-time public practice, or full-time private practice, there are many other places in England and Wales where there are openings for doctors who want to do part-time private and part-time public practice."

The administrative proposals came in for much pertinent criticism, summed up in Lord Moran's phrase: "There is not one medical service, there are to be six. . . ." In spite of all the arguments in the White Paper, it cannot be said that the principle of comprehensiveness has been observed, and a Liberal speaker (Mr. Graham White) in the Commons regretted that the opportunity had not been taken to make "the Minister of Health really Minister of Health for the whole country, (and) giving him the control . . . of industrial health and also the school medical service." Mr. White also criticized the central administrative body—presumably meaning the Central Medical Board—as having a tendency to "become a close corporation and develop a Fascist tendency." In Lord Moran's view the functions of the Central Medical Board were more controversial than all the rest of the White Paper put together. The proposed powers of civil direction in time of peace were most unusual, and he thought it not irrelevant to ask the Government whether they intended to apply similar powers to other sections of the community. If the Board was to have the confidence of the profession, then some at any rate of its members should be elected by the profession. He thought that in order to avoid

splitting the profession into two the Central Medical Board should have a general practice section and a section for the consultant and specialist. The fears of the profession generally about the Central Medical Board were well expressed in the Commons by Dr. Morgan, and he voiced a common attitude when he said: "In all the services run by the Government there seems to be a blight to keep the doctors down and keep them [from] developing that initiative which they want to develop." He was afraid of the directionary powers of the Central Medical Board and wondered, for example, whether it might not send a young doctor into a bad practice, or into general practice when he might be better fitted to be a specialist. Not even the explanations of Mr. Willink and Miss Horsbrugh about the fate of the young doctor of Wakefield could remove from the mind of Parliament the distrust felt towards the Central Medical Board. In Lord Dawson's words: "There is no body more in danger of becoming bureaucratic. . . ."

Health centres came in for their meed of praise and blame. The Government has its preference for paying health centre doctors by salary and for removing the competitive element among health centre doctors. This may be sound administration, but we doubt whether it is sound biology. Lord Moran considered that doctors who qualify after the war will prefer to work at health centres, and anticipated that "in no distant time the great majority of the younger men in the profession will be working in these health centres, working on salary because that is the means of remuneration proposed for the health centres." The result of this would be that the greater part of the profession would be removed from a life where rewards were conditioned by success in practice, and would be working in a service where rewards would bear little relation to professional success. "I think," he added, "it would be advisable to have some material stimulant to keep men on their toes." Nevertheless he thought that the centres would provide opportunities for work for the practitioner which had not existed in the past, and that they would make for greater efficiency. Reward for effort was also emphasized in the Commons by Dr. Howitt: "If you do not make a doctor's life attractive; if you do not allow him initiative and enterprise and a reward for hard and good work, you will not attract into the profession the people you want to attract."

The effect of the White Paper upon the position of the voluntary hospitals was discussed at length in both Chambers. Mr. Storey echoed the fears of many when he suggested that the White Paper proposals had been so framed as to make it possible at no far-distant date to acquire the voluntary hospitals and build them into a full State service. "The essence of a voluntary hospital," he observed, "is not its charitable funds but its tradition, its experience, the facilities it offers for independent experiment, independent research, and individual teaching, and also the opportunities which it offers for voluntary public service." There was little doubt in most of the speakers' minds about the effect of the new proposals on the financial stability of the voluntary hospitals. One member wanted to see grants to voluntary hospitals administered in much the same way as a University Grants Committee makes payment to a university. Another member suggested that present members of contributory schemes should have the right "to earmark their taxation contributions, if they wish, for their hospitals contributory scheme." Fears for the finance of the voluntary hospitals are really fears for the control of these hospitals, because once the bulk of the money for the voluntary hospitals comes through local authorities—i.e., the new Joint Boards—they will insist upon a greater say in the control of the hospitals. In this connexion we would draw attention to remarks made by Dr. Howard E. Collier in a letter published in the *Supplement* of March 11. He asks: "Is the sole difference between a voluntary and a 'State' hospital the *source* from which its finances are derived? Has the voluntary principle contributed nothing of value to our hospitals except hard cash?" Dr. Collier suggests that the fact that a hospital is administered by a voluntary committee should not prevent it from receiving State money. What medical men wish to secure is professional freedom in a hospital, and this they get from voluntary administration. Such an atmosphere makes for full exercise of individual medical responsibility, and it is this which is of such importance for the patient. The principle of administration of the municipal hospital is different, and in the view of many discourages initiative and dampens the sense of responsibility on the part of the doctors working in it. As Lord Dawson wisely observed, "We do not place our claim for the voluntary hospitals merely upon sentiment."

The great merit of the White Paper is that it leaves plenty of room for discussion and negotiation, and Government spokesmen have already shown a readiness to take into full account the point of view of the profession on professional matters. The medical profession may well reflect upon the remarks made by Lord Samuel. The White Paper, he observed, "deals with one large part of what is the great political problem of our time." This problem was, how far State action should extend in industry, commerce, education, and health. In the nineteenth century this country had to deal largely with questions of constitutional reform and the establishment of full self-government. To-day the view of the country was that the part played by the State could not be decided according to the formula of individualism or the formula of socialism; there must be a combination of both. And this, we may add, would seem to be the line of thought behind the White Paper.

LESSONS FROM THE BOSTON FIRE

When 114 victims of the Cocoanut Grove fire in Boston were brought to the Massachusetts General Hospital the staff were ready not only with an organization inspired by Pearl Harbour for dealing with a large influx of casualties but also with a clear-cut programme for the treatment of burns, on which two research projects were running at the time. The experience of the various departments of the hospital is recorded in a symposium of fifteen papers,[1]

[1] *Ann. Surg.*, 1943, **117**, 801.

from which, out of a wealth of detail, a few facts of general interest emerge. As is to be expected when large numbers of people are subjected to the same physical violence, the injuries conformed to a pattern. The most obvious feature was the superficial burning, more extensive in women than men owing to differences in clothing; but of greater consequence were the accompanying respiratory lesions due to inhalation of flame or gases. The burns were of the type known as flash burns—i.e., brief exposure to high temperature—and the distribution of the burns bore striking testimony to the protection afforded by ordinary clothing against this kind of burn. Flash burns are common in warfare and often occur in circumstances in which respiratory complications are likely, so this aspect of the disaster is of special interest now. Although there was panic in the night club, none of the M.G.H. cases were found to have fractures. The conformity of the injuries to a pattern must not be forgotten if any attempt is made to compare the results of treatment with those obtained in other circumstances. In this connexion it is worth noting the speed with which the victims were got to hospital and the absence of treatment before admission.

Altogether 491 persons lost their lives in the disaster, and only 181 of the injured reached hospital alive, 39 of them dying later. The high proportion of dead to injured —of 114 victims brought to the M.G.H. only 39 were alive —clearly shows that there was at work some factor other than burning, which was for the most part superficial. This was early realized by the staff of the hospital, and the cherry-red colour of carbon monoxide poisoning was noted in some victims on admission. In view of the high death rate the paucity of post-mortem reports in the symposium is disappointing. It is true that a few are given in detail, but one gathers that only six were performed at the M.G.H. and a further sixteen in other parts of the city. If it is assumed that these are representative, the deduction follows that nearly all the fatalities were due to respiratory lesions—either burning of the air passages or asphyxia. There is nothing to indicate whether any of the asphyxial cases were of the type seen in the shelter disaster in this country. Of more practical interest than the asphyxial cases were those with burns of the air passages, for these presented a serious problem in treatment. An early observation was that patients with respiratory complications did not all respond to sedation with morphine. It is suggested that hyperactivity or even delirium may be due to cerebral anoxia, and two patients were promptly quieted by oxygen inhalation: for these patients morphine may be harmful. A few hours after the fire a number of cases developed dyspnoea, which had not been present on admission. This was attributed to the appearance of oedema in the respiratory burns comparable to that seen in burns of the skin. About twenty-four hours after the fire dyspnoea and cyanosis became worse in some of the cases, and in several tracheotomy or intubation was performed. Only two patients out of five treated by tracheotomy survived, and seven in all died in this stage. In three cases post-mortem examination showed that the lesions were too extensive to be relieved by tracheotomy—membranous inflammation extending into the smaller bronchi. The cause of this change was in doubt, but it was thought to be the inhalation of toxic fumes. At a later stage the picture was of migratory atelectasis and emphysema due to obstructive bronchiolitis. One of the more important conclusions from this experience of pulmonary complications is that the degree of inhalation burn could not be ascertained immediately after the injury, and that the extreme oedema of the air passages that occurred in some cases was unpredictable. It is urged that great vigilance is needed for attacks of oedema even in patients with minimal surface burns.

The treatment of the surface burns consisted of no débridement, no cleansing, boric ointment dressings, and internal chemotherapy. In addition burns of the face, scalp, and extremities were bandaged with pressure. The dressings were not changed until the fifth to the tenth day, and in the case of superficial burns no other treatment was used. For chemotherapy sulphadiazine was given, and a previous observation that the concentration of drug in blister fluid of the burns follows closely that of the blood was confirmed. Thirteen patients were treated with penicillin by injection; most of these were cases in which the temperature remained raised after the sixth day. No claims are made for the value of this treatment, in which the dosage was afterwards thought to be too small. It is difficult to assess the results of the treatment of surface burns, but the staff of the M.G.H. thought them gratifying. Though bacteriological studies showed that most of the burns were infected, the second-degree burns healed without clinical evidence of infection and with minimal scarring. The deep burns remained unusually free of invasive infection. Whatever may be thought of this method as a routine treatment of surface burns, there is no doubt that in this particular disaster, with its high incidence of pulmonary lesions, it had great advantages. The minimal interference with surface lesions accorded well with the treatment of shock and asphyxia. It is to be hoped that information will be forthcoming about the fate of the 142 victims taken to other hospitals in Boston: 110 of them survived. There should be ample material for comparison with the experience of the Massachusetts General Hospital, whose staff have done real service in preparing this symposium.

PENICILLIN IN VENEREAL DISEASE

It is already well known that penicillin will cure uncomplicated gonorrhoea with a rapidity and certainty unapproached by any other form of treatment. This was to be expected from the *in vitro* observations made by the Oxford workers[1] in 1941; the gonococcus heads their list of pathogenic bacteria given in the order of their sensitivity to penicillin in culture. Clinical confirmation of this effect was first obtained in the U.S.A.,[2] and repeated in a small number of cases in the British Army in North Africa.[3] The necessary treatment for a man consists of a series of intramuscular injections over a period of about 24 hours and using not more than 100,000 units; the discharge ceases "like turning off a tap," and the usual tests for freedom from infection become and remain negative. It is obvious that under present conditions penicillin should not be used

[1] *Lancet*, 1941, **2**, 177.
[2] *J. Amer. med. Ass.*, 1943, **122**, 1217.
[3] *British Medical Journal*, 1943, **2**, 755.

wholesale for this purpose; indeed, it is probable that even when the supply position has much improved penicillin should be reserved for sulphonamide-resistant cases. There are so many other unsatisfied demands for the drug that may be held to have a superior claim for reasons which include the actual saving of life, that even this limited concession may occasion misgiving until supplies are adequate for all purposes. It is now announced that penicillin can also be used for the treatment of syphilis. Preliminary studies of the treatment of the disease in rabbits having given encouraging results, the investigation has now been extended in the U.S.A. to man, and Mahoney, Arnold, and Harris[4] report on the effects in four cases. These were all men with chancres of eight to ten days' standing. They had no treatment except intramuscular injections of penicillin, each dose containing 25,000 units, given 4-hourly day and night for 8 days, the total dose thus being 1,200,000 units. Some malaise and slight fever were produced, and the chancre became painful and the inguinal lymph nodes enlarged and tender. Dark-ground microscopy was employed at 4-hourly intervals from the start of treatment to study the effect on the organism: no *T. pallidum* could be found after sixteen hours. No fewer than seven qualitative and three quantitative serological tests were used to follow the progress of the disease, and, with a few doubtful exceptions in one case, all became negative, usually some weeks after the treatment was complete. It is of course intended to watch these cases further, and very prolonged observation of a much greater number will have to be carried out before the treatment with penicillin even of primary syphilis can be accepted as efficient. On possible actions at later stages there is no information at all. It will, of course, be of immense advantage if a course of only eight days even of very arduous treatment should prove to be effective, and it will certainly be safer than any other form of intensive treatment, since penicillin has never been known to have any serious toxic action. Who would have supposed that both venereal diseases would ever be curable by the use of a single remedy?

DIGITALIS IN CONGESTIVE HEART FAILURE

Although the use of digitalis for the treatment of heart disease was due to Withering, one of our own countrymen, it has been left to those elsewhere to make the fullest use of it, for even to-day digitalis and the digitalis glycosides, such as digoxin, are scarcely ever given to patients with heart failure when the rhythm is normal. As a result of the work of Mackenzie and of Lewis digitalis is reserved for the heart failure which follows auricular fibrillation, a failure due not to any weakness of heart muscle but to a disordered rhythm. Like any other pump, the left ventricle cannot eject fluid unless there is time for it to fill between each stroke. If the impulses come from the auricle too quickly, as when the auricle fibrillates, the output from the ventricle is poor, no matter how powerful the ventricular muscle may be. Digitalis and its glycosides restore the normal output by depressing conduction from the auricle to the ventricle and so reducing the number of impulses which reach the ventricle. The ventricular rate is slowed, and the ventricle has time to fill. Digitalis, however, has another action: it increases the force of contraction of the cardiac muscle. When this action is demonstrated on a normal heart muscle it is small and not impressive; in muscle which is damaged, however, it is much greater. It should be the duty of every teacher of pharmacology to show his students how strophanthin increases the cardiac output in a heart–lung preparation in which the ventricular muscle has first been weakened by a barbiturate. This demonstration is important, because it is the basis of the use of digitalis in patients with failure in whom the rhythm is normal.

Recently S. Berséus,[1] working in Stockholm, has determined the effect of glycosides of strophanthus and of digitalis on the cardiac output of normal individuals and of patients with congestive failure. In conformity with results in animals he observed very little effect on the cardiac output of the normal subjects, but in the patients he was able to demonstrate the increased output with certainty. He used a Danish preparation of digitalis called digiton, injecting 2 c.cm. intravenously. This is equivalent to 2.6 c.cm. (or 40 minims) of standardized tincture of digitalis. In one group of patients the mean of the initial values for the cardiac output was 1.97 litres per minute. One hour after injection this rose by 19%; after two hours it was still 15%, and after two and a half hours 8%, above the initial value. A similar result was achieved in one patient in whom there was no disorder of rhythm and who had a slow heart rate. This was a case of mitral stenosis and insufficiency, with pronounced decompensation and a heart rate of 52 per minute after fourteen days without digitalis. When the injection was given the cardiac output rose from 2.32 litres per minute to 2.59 after two hours. The patient improved considerably with digitalis and diuretics. In these patients there was not only a rise in the cardiac output but also a fall in the arteriovenous oxygen difference; with the improved circulation the venous blood arriving at the right side of the heart was not so reduced. The decrease in the arteriovenous oxygen difference was 15% at its maximum. These results bring to memory the efforts of the late A. Fraenkel to popularize the use of strophanthin[2] for patients with heart weakness and normal rhythm. Strophanthin, which in the *B.P., 1932* is a standardized preparation of uniform potency, is given intravenously, and has a similar action to digitalis, but it is not cumulative, so that the injection can be repeated every other day. Fraenkel used 1/240 grain (or 0.25 mg.). One of his more remarkable charts[3] showed the loss of 15 lb. oedema fluid in a patient to whom he gave strophanthin, despite the existence of arteriosclerosis, a heart rate of 40 per minute, and complete heart-block.

It is probable that there are many patients who after an attack of pneumonia or bronchitis continue to suffer from congestion at the base of the lungs for some time. A careful trial of digitalis in the form of leaf or tincture, or as the crystalline glycoside digoxin, should certainly lead to more rapid disappearance of the congestion. Berséus also made observations on the effect of theophylline diethanolamine on the cardiac output and of nikethamide (coramine) and leptazol (metrazol or cardiazol). None of these substances affected the cardiac output of patients with congestive heart failure, and the only substance which produced any effect at all was theophylline, which in a dose of 0.2 g. given intravenously caused a slight increase in the oxygen consumption. It is excellent to have clinical evidence from patients with heart failure that these substances do not act as cardiac stimulants.

Dr. H. Guy Dain, Chairman of Council of the British Medical Association, will receive the honorary degree of M.D. from the University of Birmingham at a special congregation in July next.

Dr. R. W. Craig, Scottish Secretary of the B.M.A., is one of the newly elected Fellows of the Royal Society of Edinburgh.

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[1] *Acta med. scand.*, 1943, Suppl. 145.
[2] *Strophanthin-therapie*, Julius Springer, Berlin, 1933.
[3] *Lancet*, 1935, **2**, 1101.
[4] *Amer. J. publ. Hlth.*, 1943, **33**, 1387.

TEACHING AND RESEARCH IN OPHTHALMOLOGY

BY

Sir JOHN HERBERT PARSONS, D.Sc., F.R.S., F.R.C.S.

Recent discussions and correspondence reveal some confusion of thought among ophthalmologists with regard to the roles of teaching and research. This confusion seems to permeate the discussions and planning of medical education in general. It may therefore be worth while to analyse the concrete example of ophthalmology. Before doing so, however, certain general principles of medical education should be stated and be firmly kept in mind. The primary functions of the medical man are the alleviation and prevention of bodily ailments; and, important though research may be, it is not derogatory to it to assert that, so far as the practice of medicine is concerned, it is ancillary and secondary to those great primary functions. Of course, medical research may be carried on as a branch of pure science, but too great stress upon this aspect is not free from danger in dealing with medicine as an applied science. As an example one may point out that physiology has tended more and more to become a pure science, relatively independent of medicine; and however beneficial to medicine this may ultimately be, it does not appear to have been immediately beneficial to the teaching of medical students.

In his excellent article on "Some Principles of Reform in Medical Education" (*B.M.J.*, 1944, **1**, 173) Dr. F. M. R. Walshe, after reference to the universal dissatisfaction with the present curriculum, says: "It is the fundamental defect of our teaching that we have not given the student a firm grasp of general principles, we have not taught him to weigh evidence, to discriminate or to think logically, and we have too often failed to imbue him with that keen desire for understanding that is the essence of true education. We have been content to preoccupy him with feats of memorizing and with the acquisition of an increasing number of techniques." He summarizes the essentials of reform as follows:

"(1) A carefully thought out pruning of the amount of factual knowledge we seek to impart, ruthlessly undertaken in order that

"(2) the student may be enabled to develop a more thoughtful and critical attitude, and a deeper understanding of the causes and manifestations of disease.

"(3) An explicit recognition of the necessity of a leaven of theoretical medicine, side by side with its vocational aspects, and the provision of a category of teachers who shall develop it."

In an article on "Medical Education of the Future" (*Lancet*, 1940, **1**, 420) I expressed the opinion (1) that the teaching and curriculum for the qualifying examination should be designed to produce the best type of general practitioner; and (2) that the teaching hospitals should cater for both undergraduate and postgraduate students. So far as I have been able to gather from conversations with members of the various planning organizations, the first principle has been definitely accepted, but I have been able to obtain no evidence that the extremely difficult task of initiating radical changes in the teaching and curriculum which this reform demands is being embarked upon. As Dr. Walshe remarks, "In addition to this rebuilding of the very foundations of medical education, there can be no doubt that an urgent need is a quite ruthless pruning of the range and amount of factual knowledge we expect of the student."

The Teaching of Ophthalmology

Applying these general principles to the *teaching* of ophthalmology, it is immediately apparent that this specialty is essentially a postgraduate study, and that the undergraduate student should be taught only those parts which are necessary for a general practitioner—e.g., the diagnosis and treatment of external diseases, the use of the ophthalmoscope, and, last but not least, when to call in the help of an expert. This course will be best carried out in the ophthalmic department of the general hospital.

It is unnecessary to deal here with postgraduate teaching, except to state that medical ophthalmology should receive more attention than at present and that it would be best carried out in an eye hospital, and most efficiently in one closely related topographically and corporately with a general hospital. The regional distribution of medical teaching which seems likely to obtain in the future will facilitate such a scheme. Each region should have its ophthalmic institute incorporated with the central teaching hospital and school. Two such institutes would suffice for London: one in the north, near University College, formed by the amalgamation of Moorfields, the Central London, and the Western Ophthalmic Hospitals; the other in the south, near King's College Hospital, formed by the amalgamation of the Westminster and the South London Ophthalmic Hospitals. Other such units should be established in the large provincial towns.

Research in Ophthalmology

When one considers *research* in ophthalmology it is equally necessary firmly to bear in mind certain general principles. Here again the fundamental principles have been clearly set forth by Dr. Walshe in his article on "Strategy and Tactics in Research" (*B.M.J.*, 1943, **1**, 467). While it is impossible and most inexpedient to divorce so-called "basic" from "clinical" research, there is sufficient disparity between them to justify considering ophthalmic research under these headings.

Clinical research has long flourished in eye hospitals, and should be encouraged in every way, financial and otherwise. It should not, however, in my opinion, be under the control of a whole-time professor, except in the very rare instance of the advent of a man specially endowed by temperament, originality of thought, skill, and training (see below).

"*Basic*" *research*—the investigation of the nutrition of the eye, intraocular pressure, glaucoma, cataract, etc.—demands a knowledge and a training which few ophthalmologists possess. Such notable exceptions as Donders, Leber, Priestley Smith, and, more recently, Duke-Elder and Mrs. Dorothy Campbell, are *rarae aves*. Such research requires extensive, profound, and up-to-date knowledge of many branches of pure science—physics, chemistry, biochemistry, and so on—together with prolonged training and familiarity with laboratory techniques. These attainments are more likely to be found among young physiologists than among ophthalmologists. As Dr. Walshe so well says, "No planning can provide us with these men or determine the goal of their labours"; and again, "It is round the man and not round the plan that the wheels of research revolve most rapidly." This all-important fact was clearly recognized by Sir Walter Fletcher, and the phenomenal success of the Medical Research Council probably owes more to it than to any other. Encouragement, opportunity, financial assistance, and a free hand to a man who has shown originality, skill, perseverance, and enthusiasm in research may well eventuate in "a sort of spontaneously arising organization that has grown round a personality and has owed little or nothing to deliberate planning. When this comes into existence it is the richest of all sources of original knowledge" (Walshe).

The Research Professorship

It is a fallacy, only too prevalent at the present time, to imagine that the lavish endowment of whole-time *ad hoc* professorships and their multiplication will solve the problem of research. It does not follow that this is not the ideal method of procedure in appropriate conditions. The most important of these are (first and foremost) the man; and then intimate association with other research workers, especially those engaged in ancillary sciences; and, of course, adequate facilities.

For reasons already stated, the most suitable man is likely to be found among the younger physiologists. Dr. Lythgoe was an outstanding example of the success of nursing up and ensuring an adequate livelihood for a young physiologist interested in visual problems. But for his untimely death he might well have founded a school of research. Even he was lacking in clinical ophthalmic experience. I thoroughly endorse the opinion of Dr. Walshe: "I cannot believe that any medical research worker can afford to divorce himself from clinical studies. When he does so he invariably loses touch with reality."

The qualities required for a "basic" research professor in ophthalmology are exacting. The Medical Research Council have been fortunate in obtaining Dr. Hallpike as head of an

otological research unit, and I have reason to think that they would be prepared to institute a similar ophthalmic unit if a suitable man could be found. If found among the physiologists it should be made a condition of his grants that he should obtain clinical experience in an ophthalmic centre. In the meantime it would be wise to devote financial support to grants in aid of clinical and basic research, and to defer the appointment of a whole-time professor until a suitable clinician or a suitable basic research worker is discovered.

Some reference should be made here to the Oxford Ophthalmological Research Endowment scheme. The conditions at Oxford fulfil most of the requirements for a whole-time professor. There is an eye hospital next door to a large general hospital. All the facilities of the University science laboratories are available, and these provide the requisite "atmosphere" of research. Moreover, the senior surgeon to the eye hospital, Miss Ida Mann, is of proved skill as a research worker. One has here the nucleus of an ophthalmic research institute which more than any other at the present time justifies support.

Reports of Societies

SINUS TROUBLE IN CHILDREN

At the Royal Society of Medicine on Feb. 25 a discussion was held on sinusitis in children.

Mr. H. BEDFORD RUSSELL said that failure to detect sinusitis after the infections of childhood might condemn the patient to a long train of apparently unrelated diseases. The earlier the treatment of sinusitis the greater the hope of achieving complete cure. The vicious circle of swelling, lack of ventilation, and more swelling must be broken. The indication was to reduce the swelling and introduce some harmless vasoconstrictor to every available part of the mucous membrane. Medical men were disinclined to use cocaine because of its habit-forming properties, but he had not met with addiction after its use in the nose. The risk of absorption through the mucosa was reduced by mixture with some vasoconstrictor. In children with sore noses it was important not to use the speculum unsupported. Nor was it desirable to use the spray with the patient supine; if the patient would not sit up the head should be turned to one side so as to avoid the need for tilting the spray. He demonstrated on a small patient his palliative displacement method. Though the aim of displacement was simply the introduction of fluid, its use was often immediately justified by the voidance of a huge blob of mucopus. In judging the results of displacement note should be taken of the cessation of nasal breathing and relief of headache.

Mr. S. E. BIRDSALL said that the developmental continuity of the nose, sinuses, and middle-ear led to the logical conclusion that sinusitis was likely to be just as common as otitis media in children. It was not so regarded because of three obvious corollaries in middle-ear disease which made its recognition easy and were not found in sinusitis in children—namely, pain, loss of function, and visible external disease. In adults sinusitis might exist without any appreciable formation of pus. The essential in diagnosis was anterior rhinoscopy. In 80 cases of indisputable sinusitis in children, the clinical features of which he had tabulated, the aetiology was hard to assess, and in only 13 was there good evidence of antecedent cause. Of specific infections, unless the common cold was regarded as such, whooping-cough was the most common. The important symptoms in these 80 cases were, first, nasal obstruction, and, secondly, cough. Cure of sinusitis in children depended only on recognition of the disease. Ephedrine was very often successful. Operation was necessary in fewer than 10%.

Mr. A. WELLS held that defective respiration was the root cause of a great number of cases of sinus trouble, particularly in children. The blocked nose meant increase of pathogenic organisms in the nasopharynx. Most infants breathed perfectly freely through the nose in spite of the fact that the adenoid tissue in the nasopharynx was present at birth. At some stage the child developed a cold in the head and became for the time a mouth-breather. In due course resolution took place and the tissues returned to normal, but in a proportion the mouth-breathing continued as a habit or a necessity. He recommended the simple treatment of diastolization as being likely to prevent the need for a great deal of after-treatment. The apparatus consisted of hollow rubber bougies of various sizes, shaped to adapt to the nasal canal. By compression of a bulb the bougie dilated. Saline solution was introduced into the nose, and a massage of the nasal mucosa was brought about. Out of over 2,000 children with defective hearing severe enough to fail in the test on three consecutive occasions, 57% improved after a course of diastolization sufficiently to enable them to pass the test.

Dr. W. GUNN said that he had searched the records of fever cases at the North-Western Fever Hospital in a recent year and found sinus infection only in 8 out of just over 2,000: 5 of these 8 were associated with infectious diseases, 3 of them being measles.

Dr. R. CRUICKSHANK said that the cases of sinusitis he had seen were cases which had defeated both physician and surgeon and had come as a last resort to the bacteriologist in the hope that some vaccine might be found. He uttered a word of warning about *Staph. aureus*, which was present in the nasal cavities of from 60 to 80% of children; therefore the discovery of it in the nasal swab did not necessarily mean infection in the nose or associated sinuses. It was remarkable how frequently the patient did not refer the symptoms to the sinus. Persistent sore throat, headache, general mental weariness, and recurrent attacks of pneumonia might be associated with the primary focus in the sinus. On the bacteriological side of this problem the nasal carrier as a possible source of infection should not be forgotten. If examination was confined to throat swabs, more often than not the actual source of infection would be missed.

A Question of Terminology

Mr. T. B. LAYTON asked what was sinusitis. What would be thought of the Section of Medicine or the Association of Physicians if they spent two solid hours talking about "rheumatics"? Yet it was something corresponding to that that Mr. Bedford Russell and Mr. Birdsall had done. They had lumped together a number of different pathological conditions under the term "sinusitis." Pus in the sinuses was, in his opinion, rare in children. When it did occur it was very difficult to eliminate. He had still under his care a girl aged 20 who developed it after either scarlet fever or measles at the age of 5. The nasal cavity was even yet not quite free from pus, but during the interval she had developed normally in mind and body, and had none of the numerous disabilities which were said to be attributable to sinusitis. Early in the 'twenties it became appreciated that instead of polypi in the nose being secondary to sinusitis, there was a polypoid reaction in the lining of the maxillary and other sinuses. Presumably that reaction was inflammatory, and one could rightly apply the term "sinusitis" to it, but when there were two distinct lesions to which the same term was applied it was well to use a qualifying adjective. Polypi were not common in children; in the rare cases in which they occurred they were secondary to a suppurative reaction in the sinuses on which the original teaching was based. The sinuses were involved in the great majority of cases of rhinitis, and he thought this rhino-sinusitis should be treated on physiological principles, the first object being to restore nose-blowing as the swelling of the mucous membrane in the acute invasive stage began to pass away. He urged that before children were discharged from a fever hospital the nurse should take care to establish nose-blowing. This would be of greater value "than all the cultures and swabs in the world."

A meeting of the Joint Tuberculosis Council was held at the London School of Hygiene and Tropical Medicine on Feb. 19, with Dr. James Watt in the chair, when among much other business the following resolution of the Tuberculosis Association was reported: "The Council of the Tuberculosis Association be instructed to approach the Councils of the J.T.C. and the N.A.P.T. with a view to a joint request to the Minister of Health to make B.C.G. available for trial in this country." In the discussion which followed Prof. W. H. Tytler expressed the view that, if an investigation was asked for, the general use of B.C.G. would be delayed for a considerable period. Though the majority of members were of the

opinion that B.C.G. should be made available for the inoculation of selected tuberculin-negative persons, no formal change was proposed in the terms of reference, and Prof. Tytler and Dr. Wilfrid Sheldon agreed to represent the Joint Tuberculosis Council in the deputation. The following officers for 1944 were elected: chairman, Dr. James Watt; vice-chairmen, Dr. P. Sutherland and Dr. N. Tattersall; hon. treasurer, Dr. A. P. Ford; hon. secretary, Dr. Norman England. The Council recorded appreciation of the very valuable services rendered by the retiring officers: Dr. J. B. McDougall as hon. secretary, and Dr. G. Jessel as hon. treasurer.

At a meeting of the Manchester Medical Society on March 1 Dr. A. A. Moncrieff gave an address on "Some Disorders of the Newborn Baby." He indicated first the importance of the subject, since the death rate among the newborn had not been reduced and represented a loss of life which was serious. Organized effort in other parts of the world, notably Chicago, had effected a great reduction. Much of the trouble arose from the way in which people regarded diseases of the newborn as rather mysterious. Just as paediatrics was general medicine at a special age period so diseases of the newborn were largely problems of applied physiology and pathology at the beginning of life. Dr. Moncrieff dealt first with problems of respiration, showing how the work of Adrian and of Barcroft had cleared up many problems. Respiratory failure was most commonly due to obstruction or to depression of the respiratory centre. Next he dealt with head injuries in the newborn, pointing out how their management was the same as in adult patients, and he stressed the value of hypertonic saline per rectum. Finally he dealt with some of the problems of infection in the newborn baby, stressing the need for research into many aspects of immunity at this age period. In reply to a question he gave a brief survey of the influence of the Rh factor on the mother and foetus.

Correspondence

Reform in Medical Education

SIR,—In his admirable paper on this subject (Feb. 5, p. 173) Dr. F. M. R. Walshe discusses the peculiar situation which has resulted from the rise and spread of specialization in medicine. Medical education, it would appear, is in danger of becoming a mere vocational training. The student spends years in amassing numerous facts relating to the various special branches of medicine, yet he may remain unable to weave these tangled threads into one coherent fabric of knowledge.

This problem has been recognized in high places, and one plan for its solution, now under trial by military and civilian authorities alike, has been the introduction of the psychologist into the scheme. Apparently it is felt that, although by this action the services of yet another specialist are enlisted, the psychologist, encountering the patient who, for better or worse, has passed already through the hands of experts in other departments of medicine, will focus attention upon the man himself rather than upon his individual organs. As for the student, any tendency on his part towards an incoherent or disconnected conception of medicine may be counteracted, it is hoped, by the wider vision revealed to him by a study of psychology, normal and abnormal.

Unfortunately, this solution of the difficulty is not fulfilling all the hopes of its promoters. As Dr. Walshe remarks, psychological medicine is still "highly charged with controversial matter." He goes on to suggest as the essentials of reform in medical training, first, a careful pruning of the curriculum, and, secondly, the introduction of what he terms "a leaven of theoretical medicine." A closer attention to the theory or the first principles of medicine would presumably supply to the student some of that philosophical outlook which Claude Bernard sought to impart to readers of his classic work *The Introduction to the Study of Experimental Medicine*. Some such fundamental "grounding" must strongly appeal to those who view with alarm the ever-rising tide of specialism. But where is this basis of medical theory to be found? Probably not in psychological medicine, nor, indeed, in any medicine of to-day, so sadly decimated and fragmented by the specialists. Not to the present but to the past we must look—to that past so often derided as useless and obsolete—if we wish to study first principles in their correct perspective.

In his recent address to the Royal College of Physicians Mr. Churchill, confessing himself to be a great admirer of tradition, remarked that, "*The longer you can look back the further you can look forward.*" His words might well be adopted as a slogan by those responsible for medical education. There is much to be said for a "return to Hippocrates," warmly advocated a few years ago by those who saw danger in the present-day trend of medicine. They hoped that the entire patient, and not merely a small part of him, would occupy once more the centre of the picture. There might even be justification for the reinstatement of the "Aphorisms" as a students' textbook. But medicine has had a long and varied career since the "Father of the Art" held his clinics under the plane-tree of Cos, and nothing less than a complete conspectus of medical thought and practice throughout the centuries will furnish that theoretical foundation which modern medicine so sadly lacks. Sir William Osler was of opinion that "by the historical method alone can many problems of medicine be approached profitably." Nevertheless, at the present time none of the medical schools of our country is providing systematic instruction in the history of medicine for its students. "It is a dry age," continues Osler, "when the great men of the past are held in light esteem." Have we arrived at that "dry age" so far as medicine is concerned? If we have, the remedy is obvious.—I am, etc.,

Edinburgh. DOUGLAS GUTHRIE.

Prevalence of Ketosis among Children

SIR,—For some time it has been apparent that an increased number of children have been seen in this area with the signs and symptoms of faulty fat metabolism. As shown by routine testing of children's urine for acetone bodies (Rothera's test) a large proportion are suffering from some degree of ketosis.

It is well recognized that acute infections may be accompanied by acetone bodies in the urine, and that in certain types of children nervous or physical exhaustion (over-excitement or violent exercise) may have the same effect, as may vomiting from any other cause. It seems, however, that at the present time the majority of children examined have acetone bodies in the urine.

The commonest symptoms and signs are anorexia, headache, hollow-eyed appearance, bad breath, pyrexia, abdominal pain, and vomiting. The vomiting may be absent, slight, or repeated. The pyrexia may be as high as 104° F. without any sign of infection, and the abdominal pain severe enough to suggest the possibility of acute appendicitis. In differential diagnosis it is necessary to exclude diabetes, organic disease of the brain and kidneys, and appendicitis. As regards treatment, the alteration of the diet to low-fat high-carbohydrate, and the regular administration of glucose, together with an alkaline mixture or "alkazane," have a beneficial effect in nearly all cases. The following are cases illustrating different types.

M. H., aged 6, for two years had had sudden pyrexial attacks, often unaccompanied by vomiting, though this had occurred on one or two occasions. Urine in all attacks gave a strongly positive reaction when tested for acetone bodies. Skimmed milk, reduction of fat, and regular glucose diminished but did not entirely remove these attacks. Finally no milk was allowed at all, and "alkazane" was given. So long as this regime was followed he remained free from attacks, but on the introduction of even a small amount of milk they recurred.

P. M., aged 3, had been "off colour" for several months with a poor appetite and general debility and loss of weight. Alteration of diet produced rapid and lasting improvement.

R. T., aged 12, was a new child to the district (urgent evening call to suspected appendicitis). The history was that the family had moved that day and the boy had taken an active part in helping to arrange furniture in the new house. He was highly intelligent and was said to have been very excited by the move. He complained of severe abdominal pain, had vomited several times, and his temperature was 99.8° F. There was no localized tenderness and the urine gave a strongly positive reaction for acetone bodies. Next day no symptoms—out for a walk.

The chief contributing factor seems to be the natural tendency on the part of mothers to fill up children with a poor appetite with milk and such other dairy products as are obtainable. The rationing of sugar and the diminished sweet consumption also probably play a part in predisposing to ketosis.—I am, etc.,

Tewkesbury. F. B. P. EVANS.

Nervous Breakdown in the Navy

SIR,—I have read with great interest Surg. Lieut.-Cmdr. G. Tooth's article on nervous breakdown in the Navy (March 11, p. 358) and his interesting discussion of the significance of domestic difficulties. His tables appear to show one point which he has not emphasized—namely, that the bad prognosis of those cases where domestic difficulties were found to be the main cause is explained by the proportion of such cases in which this factor was one of multiple causes; the proportion invalided where domestic difficulties alone was the main cause (24.4%) appears to be intermediate between that for enemy action (29%) and that for conditions of service (22.6%). It would perhaps be surprising to find in wartime that domestic difficulties were a more important cause than enemy action or conditions of service (out of a total of 284 cases in Table I there were 58 with domestic difficulties as a main factor). Such considerations, however, do not alter his conclusions concerning the need for social services, since "domestic difficulties" is presumably the only one of the three factors he has studied which can be tackled.—I am, etc.,

Birmingham. RUSSELL FRASER.

Vaginal Ulceration and Vitamin C Deficiency

SIR,—*Oidium albicans* and *Trichomonas vaginalis* were examined for as part of the routine investigation of all cases of vaginitis attending the gynaecological clinics referred to in the article on vaginal ulceration and vitamin C deficiency which appeared under our joint names in the *Journal* of Feb. 19 (p. 254). Both conditions were excluded in the cases quoted in this article, but this was not expressly stated, as in neither case was the vaginal discharge characteristic of an infection with *Oidium albicans* and *Trichomonas vaginalis*.

We agree with F. B. Chisholm (March 4, p. 338) that where *Oidium albicans* and *Trichomonas vaginalis* are not responsive to their specific treatment it may well be that vitamin C deficiency may be the underlying cause. This can be supported by cases we have seen, where secondary infections of syphilitic ulceration and gonococcal vaginitis have cleared rapidly with large doses of ascorbic acid.—We are, etc.,

M. K. LAWLOR.
Radcliffe Infirmary, Oxford. M. F. RICHARDSON.

Gold Treatment of Chronic Arthritis

SIR,—May I congratulate you on your excellent and very timely leading article on gold treatment (March 4, p. 329). Your endeavour to clarify the issue must be deeply appreciated by anyone who, like myself, day by day observes on a very large number of patients how widespread—I would even say indiscriminate—has become the use lately of this not so indifferent drug. I have seen not only many cases of typical osteo-arthritis but even a case of chronic lumbago that had been subjected to this treatment. Having been among the first—if not the very first—to employ gold (Möllgard's original sanocrysin) for the treatment of various types of arthritis nearly 20 years ago, I discovered that this drug has a very limited usefulness, and in a certain type of rheumatoid arthritis only.

Some years ago in a booklet (*Der Gegenwärtige Stand der Rheumafrage*, originally an anniversary lecture to the Czechoslovak Medical Association at Bratislava and published by that association in 1937) I said:

"As to the gold injections so generally used lately, after thorough serial experiments carried out on several hundreds of patients I came to the conclusion that their use should be restricted to those cases which are undoubtedly of infectious origin, the infection still being more or less active and the virulence being clearly shown by small, if even minimum, rises of the body temperature. In such cases it will be always possible to break the acute tendency of the disease and bring about an improvement of the defensive power of the organism, thus preparing the soil for the successful employment of other healing principles. Although by a very careful application of the injections it is nearly always possible to avoid any serious damage to the organism, yet such damage can and does occur, and I would like to utter a serious warning against the stereotyped use of these injections."

May I add to this that the cases of rheumatoid arthritis referred to belong to a definite type. In your *Journal* on March 24, 1928, I described the exact nature of this type of articular rheumatism. The therapeutic suggestions made there have undiminished validity even if gold treatment is carried out simultaneously.

In order to achieve a higher concentration of the gold in the synovial fluid without increasing the total amount incorporated into the system of the patient, I am at present trying to introduce electrically dissociated gold ions direct into the various joints with the help of iontophoresis. My experiments are far from complete yet, but so far they seem to be promising. I hope to be able to publish the final results later on. Meanwhile much useless suffering and unnecessary expense to patients and serious disillusion to doctors could be avoided if doctors would take your well-founded warning to heart and would seriously scrutinize their cases before submitting them to this treatment.—I am, etc.,

Newark. L. SCHMIDT, M.D.Prague.

SIR,—May I, with all due deference, refer to one or two points in your recent editorial on the treatment of chronic arthritis by gold. The profession has, I believe, come to regard such articles as valuable reviews upon different subjects compounded by authoritative specialists. Hence I feel that some comment upon this article on the treatment by gold should be made, in order that a truly fair and comprehensive review may be achieved.

In the first place there is no mention of an exactly similar investigation published eight years ago by Koppenhofer, who came to almost identical conclusions as those in the article to which you have referred by Freyburg, Block, and Levy. He does, however, make an additional and interesting observation that the situation in which the gold is deposited changes most significantly—in that in the normal animal gold is deposited in the parenchymatous cells of the liver, while whenever there is infection present in the body then the gold is deposited in the reticulo-endothelial system, and he cites similar differential deposition in the cells of the lung with and without the presence of tuberculous infection. Koppenhofer further pointed out that gold aurothiosulphate salts are broken down within the body to the sulphide, which (as I have always understood it) was the reason for using gold sulphide *ab initio* as a therapeutic substance.

You article does, however, reach the essential point in one phrase: ". . . since it is still unknown where, how, and why gold salts work." This is the crux of the whole matter. There is surely a good deal of evidence that the action of gold is necessarily upon the functions of the liver and reticulo-endothelial system. Koppenhofer subscribes to the view also held by Feldt that the action of gold "is of importance in the biological stimulation of the natural defences of the organism . . . as an activator of the proteolytic ferments accelerating the disintegration of toxic substances." This would seem contrary to your editorial statement that the only possible action of gold is to lessen or arrest inflammation, though it is not stated just how. Personally from clinical pathological experience I have always considered gold, especially when deposited in the metallic form, as having many possibilities as a biological catalyst. From the clinical point of view there is no doubt that some physiological action can be attributed to intramuscular injections of colloidal gold sulphide, and if it may be expected that the action is a catalytic one in the reticulo-endothelial system there would seem to be no reason to doubt that the usual chemical laws in relation to catalysts would not be operative.

I suggest that it would only be a fair judgment to acknowledge that clinical therapeutic effects are noted in this country as a result of the injection of gold sulphide, and also to acknowledge or recognize the earlier work of the late Koppenhofer with such very similar results. I feel certain that your suggestion that rheumatoid arthritis is "an active inflammatory condition" is a red herring which it is probably wisest not to drag any further at this juncture, nor, indeed, the question whether thiomalic acid is an inorganic compound.—I am, etc.,

London, W.1. HARRY COKE.

SIR,—In a leading article of March 4 on the treatment of chronic arthritis with gold you speak of the conspicuous lack of carefully controlled observation in the treatment of rheumatoid arthritis by gold until the recent research by Freyburg,

Block, and Levy and the work of Sabin (*Proceedings of the Mayo Clinic*, 1942). Your attention should perhaps be drawn to some significant British work, published in 1937 and 1938, by Hartfall, Garland, and Goldie (*Lancet*, 1937), and by Ellman and Lawrence from the Rheumatic Unit at St. Stephen's Hospital, L.C.C. ("Gold Therapy in Rheumatoid Arthritis, with Controlled Experiments"), and by Gasking from Harrogate, these two papers appearing in the *Reports on the Chronic Rheumatic Diseases*, Vol. 4, 1938, to which full reference is made in recent American works on "chronic arthritis." It is regrettable indeed that the White Paper makes no special mention of the rheumatic diseases.—I am, etc.,

Great Bookham, Surrey. RICHARD A. MANCLARK.

Familial Anaphylactic Death

SIR,—In your issue of March 4 (p. 331) you use the adjective "familial" preceding the word "allergy," and I must say I like it, though "familial anaphylaxis" would be better. Nothing separates these sudden deaths in persons sensitive to the protein injected from the experimental anaphylaxis of the guinea-pig except this peculiar tendency to a family history of the same or other allergic complaints.

In 1,000 consecutive cases of familial allergy a history was obtainable in 567 cases of asthma or similar complaint. In 1,000 non-allergic cases there was a family history in 422. So that asthma as a whole bears this familial trait almost as much as the allergic side of it.

Happily I have not seen such a fatality myself, probably from the small doses used and the amount of adrenaline given with them, but there are plenty in the literature. Samson quotes 40 deaths from horse-serum content in antisera. He reckons that 1 to 70,000 children may be expected to die in this rapid anaphylactic manner if it is given without the fullest precautions. The nearest approach I ever had was when giving to a very severe case of asthma in a young woman four minims of a 5% solution of peptone intravenously. Her respirations at once became more and more difficult, she became blue in the face, speechless, and then unconscious, her chest being in an inspiratory spasm. She passed water—a typical anaphylactic symptom. Ten minims of adrenaline intravenously gradually brought her round, her pulse rate being little affected during the shock. Perfectly well next morning she went to work and was free from asthma for five weeks.

Deaths have occurred from intradermal test injections, so that the puncture test or scratch tests are preferable, and always so with pollen. Using a control this is an easy way to avoid these sudden deaths, if one were at all nervous about any particular case—that is, its degree of sensitivity. I am sorry there was no greater attempt made to find out how it was that the girl mentioned in your annotation became sensitive to guinea-pig serum, nor does the original American paper help us.—I am, etc.,

London, W.1. FRANK COKE.

Chloroform Anaesthesia

SIR,—Dr. W. H. Spoor (March 11, p. 374) has not been able to adduce a more cogent argument in defence of the use of chloroform than did John Snow, who, believing ether to be safer, justified his use of chloroform on the grounds that "an occasional risk never stands in the way of ready applicability." His implication that "the expert" has abandoned the "rag and bottle" in favour of the offspring of an oil refinery and a B.B.C. transmitter merely to satisfy an unreasoning urge to play with lovely toys is misleading. Many anaesthetists of consultant standing are quite as expert chloroformists as any G.P., however old, and have to their credit as many administrations without a fatality. Why, then, have they virtually discarded an agent possessing so many advantages?

I only know my own reason, which was that the continued failure of the Angel of Death to appear had little or nothing to do with my skill but a lot to do with my luck, and that the latter might not hold out indefinitely. Or, to use the words of the A.M.A.: "The use of chloroform for major operations is no longer justifiable. Scientific investigation and clinical experience agree that necrosis of the liver (delayed chloroform poisoning) follows in a by no means inconsiderable number of cases. The causation of this sequel is unknown. There are, therefore, no precautions that can intelligently be taken against it. For minor operations the use of chloroform should cease, since its place can be taken by nitrous oxide and other agents. A previous condition of suffering or anxiety or a prolongation of the stage of excitement renders a subject liable to collapse with a small dose . . . risks of this sort are far greater with chloroform than with ether and greater with ether than with nitrous oxide. As they cannot be foreseen they cannot be avoided, except by replacing a dangerous anaesthetic by a safe one."

It is more accurate to say that chloroform *does* rather than *can* damage the liver, nor does ether *per se* cause pneumonia; the examples cited illustrate the abuse, not the use, of ether. When the contents of the G.P.'s waistcoat pocket are deemed inadequate to cope with some anaesthetic problem in a private house or nursing home, the expert does not find the transport of his apparatus an insuperable difficulty.—I am, etc.,

Aylesbury. LOFTUS DALE.

Trilene

SIR,—As manufacturers of trilene, I.C. (Pharmaceuticals) Ltd. has been concerned about reports of toxic manifestations following the use of trilene as a general anaesthetic in a closed circuit with soda lime. Consequent upon suggestions made to us by Dr. H. E. Cox, Dr. Langton Hewer, and Dr. J. B. Firth that trilene underwent decomposition in the closed circuit with soda lime, we initiated investigations to determine this point. The results of these investigations were to have been the subject of a paper by us, but in view of the papers published in the *Journal* of March 4 by (1) Dr. J. H. Humphrey and Dr. Margaret McClelland and (2) Dr. S. Carden, our intended publication is not called for, as our investigations confirm the fact that dichloracetylene is liable to be formed when trilene is used in a closed circuit with soda lime. A warning notice to this effect is now printed on all trilene packages, etc.—I am, etc.,

C. M. SCOTT,
I.C. (Pharmaceuticals) Ltd., Manchester. Director of Medical Research.

Eye Signs of Anaesthesia

SIR,—Books on anaesthesia discuss the various signs of anaesthesia, but give comparatively small space to the eye signs, which, in my opinion, are as valuable as other phenomena to assist in determining the plane of clinical anaesthesia. The late Mr. Herbert Charles of the Middlesex Hospital taught his anaesthetic clerks certain eye signs which are not generally known, at least by the younger postgraduate.

In consciousness the emmetropic subject, looking straight ahead into the distance, is seen to have the pupils "central and parallel." The pupil is midway between the palpebral fissure, and the rays of light are parallel on entering each pupil. This position of the eyes occurs at the beginning of inhalation anaesthesia, although the pupillary diameter may be altered according to the premedication. The size of the pupils need not be discussed here, as this is dealt with in all textbooks on the subject.

At the end of the first stage (Guedel's classification) the eyes, still parallel, begin to rotate downwards, and still more so during the second stage. This state is well seen in nitrous oxide, vinyl ether, and ethyl chloride inhalations. Towards the end of the second stage the eyes, still parallel, deviate to one side or the other. Occasionally coarse oscillations are noticed, but are too inconstant to be of any clinical value. The next well-marked phenomena occur in the first plane of the third stage. Here the eyes become markedly divergent, with the pupils usually above the middle line. This position is complete at the end of the first plane, with the pupils becoming centralized. As the depth of anaesthesia increases the angle of divergence becomes lessened, until the pupils are once again central and parallel. From here the position occurring in the early third stage remains unaltered, however much the depth is increased. As the stages of anaesthesia are reversed, so are the eye signs.

It will be seen, therefore, that these ocular movements form an accurate guide to the depth of anaesthesia.—I am, etc.,

London, W.3. E. V. SLAUGHTER.

Benzene Poisoning

SIR,—I have read the article by Drs. Hamilton-Paterson and Browning (March 11, p. 349). The writers seem to think there is no very satisfactory clinical method of detecting early cases. During the last war and for some years afterwards I examined large numbers of men. Early cases of poisoning were readily

detected by the one definite sign—viz., bleeding from the gums. I pointed this out in an article which I contributed to one of the medical journals at the time. Some of these men died, and at the necropsy haemorrhages into various organs were found. I am therefore of opinion that haemorrhage of any kind is always to be regarded as a danger signal in persons exposed to the risks of benzene poisoning.—I am, etc.,

Edinburgh. JAMES BURNET.

Culturing Meningococci

SIR,—The article on meningococcal jaundice by Dr. C. Crawford (March 4, p. 325) interested me very much, and I wonder how the blood cultures were done. Two years ago, while I was resident in the City Hospital, Little Bromwich, Birmingham, we had two cases of suspected meningococcal septicaemia, and on the suggestion of Dr. Kerr I inoculated a blood agar plate, which was previously warmed in the incubator to 37° C., with a few drops of blood directly from the syringe, and in both cases we grew pure cultures of meningococci in 24 hours. Incidentally, neither of these two cases developed meningeal symptoms.

I think it would be worth while to try this method, as it seems to give very quick results.—I am, etc.,

Isleworth. E. LEJBOWICZ.

Exomphalos

SIR,—I have read with interest the recent correspondence on this subject, and would wish to endorse the remarks of Prof. Lambert Rogers and Mr. Leonard Leys on the advisability of early operation for complete exomphalos. During 1943 three cases of exomphalos came under my care—two partial and one complete. The first infant, operated on within 5 hours of birth, had caecum, ascending colon, and ileum in the sac. Reduction of the contents was comparatively easy, recovery was uneventful, and six months later the child was thriving. The second child was admitted 72 hours after birth, the sac ruptured and infection was present. It contained the caecum, appendix, and lower ileum, and a vessel running from the mesentery to the apex of the sac had to be ligated. This infant also made a completely uneventful recovery and was fit and well when seen two months later. The third case was one of complete exomphalos and the child was operated on within three hours of birth. The sac contained the liver, stomach, and spleen as well as the caecum, ascending colon, and small intestine. Following Prof. Rogers's advice, I found that reduction of the liver was simplified by reducing the intestines first. This infant survived operation and lived for six months, only to succumb to an attack of acute gastro-enteritis. Where the liver is absolutely irreducible it may be partially exteriorized by suturing it to the wound edges.

Judging from the few cases published it seems well worth while attempting a radical cure by operation in all cases of exomphalos. The results in the partial variety are always likely to be good, but statistics indicate that operation should by no means be deferred in the complete type. To be successful the operation must be done within six hours of birth, and without operation the mortality is 100%.—I am, etc.,

Burnley. E. W. THOMAS.

Health Journal for the Layman

SIR,—I am not in agreement with Dr. J. Parness (Feb. 19, p. 270). The hypochondriacal magazines of the pseudo-scientific press will always flourish like the proverbial bay tree because they reflect a distinct (though pathological) attitude of mind. Apart from providing an income of sorts to the hack journalist, they afford an outlet for the morbid imagery of those who make a cult of ill-health. Like the platforms in Hyde Park or the letters of mental patients they serve a useful purpose in allowing an escape from repression. The healthy-minded public are, I believe, already sufficiently catered for. There is the "Radio Doctor." Most of the daily and Sunday newspapers feature occasional health and psychological articles, which are, on the whole, fairly sound and sensible, written by sufficiently well qualified doctors with a flair for the popular appeal. The women's journals and magazines usually have a medical journalist (perhaps not so well qualified) on their outdoor staff. Many of the weeklies and monthlies present brightly written health articles on topics of current interest.

Responsible editors of to-day are, for the most part, too intelligent and well informed to allow quasi- or pseudo-scientific journalism any rope. If this adequate health diet is to be supplemented at all there are interesting possibilities in the future of films and television. I feel sure that a "popular" health magazine on sensible lines would fall between two stools; neither the neurotics nor the healthy-minded people would subscribe, at any rate for long. Indeed, if they did, they might soon become neurotic. Those who dwell upon their own health tend to become ill, or imagine they are, which is very much the same thing. Broadly speaking, the less an individual thinks of the "workings" of his own body and of his "feelings," the better he is. Now, I would like to know how the ordinarily suggestible person can subscribe to some presumably thoughtful health magazine, diligently reading through it, without giving some thought to the contents and their application to himself.

A quick perusal of an article in a newspaper, a brief instructive talk over the wireless (which you can turn on and off as you like), a film on some aspect of preventive medicine—these may be all right; but when you start bringing attractively dished-up health to the study or bedside for uncritical interpretation, that is the day hypochondriasis may be born. Moreover, a suitable editor for such a magazine will not be found growing on every gooseberry bush. Presumably he would need to be some well-qualified medical-man-cum-journalist with a mission. Not the least use that lay journalist with health interests; not the least use some medical grammarian inspired by academic textbooks; not the least use some exclusive body of experts who read this and review that, and who have to consult one another before making a move! With all due respect to certain eminent medical periodicals, that is not the sort of thing we want. And what about the contributors? From where are they to be drawn?—I am, etc.,

Exminster. JOHN W. FISHER.

Sulphaguanidine in Treatment of Flexner Dysentery

SIR,—Dr. H. G. Smith (Feb. 26, p. 287) has reported on toxic skin manifestations in almost 50% of his 44 cases treated with sulphaguanidine. His observations have struck me inasmuch as Capt. A. E. Brewer (*Journal*, Jan. 9, 1943, p. 36) saw toxic symptoms in only 4½% of his 51 chronic and in none of his 26 acute cases, although his dosage was in a number of cases not less than 142 g. given by Dr. Smith.

I do not wish to discuss the possible reasons for this discrepancy, but I should like to state that I saw no toxic skin manifestations among 26 cases of Flexner Z last autumn. The reason for it is, I think, that I gave not more than 12, 10, 6, 6, 6 g., or, in other words, about 40 g. were sufficient in all cases, except the one that relapsed, for the complete disappearance of the clinical symptoms and for six successive bacteriological negative findings. In this connexion I may state that I gave 150 mg. ascorbic acid a day from the onset until the clinical symptoms permitted minced vegetables, mashed potatoes, milk, etc., to be given.—I am, etc.,

Prestwich. PAUL L. WEIL, M.D.(Tuebingen).

Doctor and Patient

SIR,—In spite of adverse criticism Dr. Barlow is, of course, quite right; and those who, from some Olympian eminence, write editorial homilies directed at their colleagues in general practice should first try and get some first-hand experience of the intense frustration which conscientious doctors have been experiencing during the war years. This will not be acquired by doing a holiday locum for some general practitioner, but will need four years of wartime conditions. One detects the crack of a whip from higher up in this annotation, and in your editorial of some months ago where you castigated G.P.s for issuing certificates without examination, as if (as others have pointed out since) symptoms were not often more conclusive than physical signs.

It is this lack of *esprit de corps* and allegiance to one's own in all ranks of medical men and women which has always made the thoughtful doctor despair of his own profession.

With the best will in the world, how can a doctor with a 95% contract practice consistently refuse to give a certificate for, say, lumbago (that first and last refuge of a scoundrel), when he knows very well that someone else will if he doesn't? And is not this perpetual kicking against the pricks of the honest doctor the best argument for a State-controlled medical service, where his masters may be counted on the fingers of one hand, instead of being directly proportional to the number on his panel list?

One knows that the war effort is paramount, and that nothing should stand in its way, but it will be a bad day when the general practitioner loses his humanitarianism.

After all, even in wartime, one's patients are not all malingerers, and medical science, boast as it may, cannot measure that indefinable weariness, both mental and physical, which many are now experiencing.—I am, etc.,

Hove. G. L. DAVIES.

SIR,—It is a relief to know that the truth about the vexed question of what is wrong (as distinct from right) has, under divine providence, been declared to Dr. Frederic Sanders (March 4, p. 341). I had not pictured myself or my neighbours as rooting after the "nimble shilling" like a hog after acorns. But which of us knows himself?

However, I would not have further trespassed on your space and patience if I were not convinced that beyond the realm of abuse there is here an issue of major consequence. The doctor-patient relationship depends on mutual confidence. The obligation to avoid absenteeism is primarily the patient's. Most patients meet their obligations. With the absentee we are discussing default upon this obligation. Here the problem begins with the diagnosis of default. Since subjective evidence from the patient is a large part of many diagnoses in routine work, are we to say that the doctor shall accept it when he gives a certificate and reject it when he refuses one?

Even if a doctor were able to judge default with accuracy is it necessarily effective to drive a reluctant and resentful patient back to his work? Since in practice the refusal of certificates in the interests of the war effort commonly implies the herding back of the debilitated with the defaulter, is not the end in view likely to be defeated by the measures taken?

There is now so much pressure on the doctor to make a moral or a social judgment where the situation demands a diagnostic or a therapeutic judgment that in my view it is dangerous for the practitioner to allow outside considerations to influence his obligations to his patient. This is particularly true at present when the State, with new duties and new coercions, hovers darkly on the medical horizon. Now more than ever I would say the purist's attitude is right. The doctor's obligation is to his patient and to him only. The only rider I would add is that which justifies the public control of infection.—I am, etc.,

Coventry. K. E. BARLOW.

Tonsillectomy in Children

SIR,—In the recent correspondence in the *Journal* on this subject too much importance has, I feel, been given to the removal of the faucial tonsils, with the consequent overshadowing of what is, in my opinion, by far the more important part of the combined operation—that is, the efficient removal of adenoids.

Undoubtedly, recurring attacks of sore throat and cervical adenitis are the symptoms for which the majority of such patients are referred to the laryngologist, while such symptoms as transient attacks of earache, deafness, and nasal catarrh are only too frequently waived aside or treated lightly, since on examination of the throat the faucial tonsils appear healthy. While admitting that in most cases of adenoids there is usually evidence of tonsillar hypertrophy, this is not invariably so, and herein lies the reason why so many of these cases are missed. I would stress this point, for such aural symptoms are of the utmost importance as being the precursors of recurrent attacks of otitis media, and the direct cause in many cases of chronic middle-ear disease with its attendant distress. In all such cases, therefore, an examination of the nasopharynx should be undertaken, and in the vast majority adenoids are found to be present.

Mr. Layton makes an important point when he says that the physiological function of the palate and fauces is frequently disturbed by the fibrosis consequent upon the removal of the faucial tonsils, and I submit that, in a large number of cases, as much benefit is to be obtained by the efficient use of the adenoid curette by itself as by subjecting the patient to the more fashionable operation of combined removal of both adenoids and tonsils.—I am, etc.,

Dartford. MORTON G. MARKS.

Consultant and Specialist Services

SIR,—May I, on behalf of my fellow specialists, be permitted to thank Mr. Hamilton Bailey for his courageous letter of Feb. 19 (p. 270). While admitting the great experience that membership of the staff of a teaching hospital confers, may I direct attention to the necessarily small number of teaching hospitals throughout the country? Is it, perhaps, suggested that all of us engaged in specialized practice and not on the staff of a teaching hospital should, by some manœuvre, be admitted to the "charmed circle"? Perhaps something like Hitler's "honorary Aryans" is intended? If so, it would be in keeping with the "oyster-like" secrecy of the "Herrenvolk."

If a register we must have, why not let us all know why, where, when, and how. Perhaps one of those in the know can enlighten us.—I am, etc.,

London, W.1. DAVID HALER.

Obituary

H. G. TURNEY, D.M., F.R.C.P., F.R.C.S.

We regret to announce the death on Feb. 26 at his house in Park Square West, London, N.W., of Dr. Horace George Turney, O.B.E., consulting physician to St. Thomas's Hospital.

Born in 1861, he began his medical education at Trinity College, Oxford, and continued it in London at St. Thomas's Hospital, taking his first medical degrees in 1888. Having held house appointments at St. Thomas's he proceeded to the M.Ch. degree at Oxford in 1890 and to the D.M. in 1897, by which time he had taken the M.R.C.P. diploma and also the F.R.C.S. He was elected F.R.C.P. in 1898. It was while holding the post of resident assistant physician at St. Thomas's that his bent for clinical medicine showed itself unmistakably; in due course he was promoted to the honorary staff, and after many years of faithful service to the hospital and its medical school he retired and was elected consulting physician. At the Royal College of Physicians he served on the Council in 1915–17 and as Censor in the years 1921, 1922, and 1924. He examined for the English Conjoint Board in 1916–20, and had been external examiner in medicine for the University of Liverpool. He was also at one time medical referee to the Treasury. For his services during the last war, with the rank of captain, R.A.M.C.(T.), he was awarded the O.B.E. (Military) in December, 1919.

Dr. Turney's interest in disease of the nervous system, while practising as a general physician, was recognized by his election as president of the Neurological Section of the Royal Society of Medicine and by the invitation given him to contribute the article on the trophoneuroses for *Allbutt's System of Medicine*. One of his sons, Dr. Horace Ferguson Turney, has practised for some years in London.

We are indebted to Sir FARQUHAR BUZZARD for the following appreciation:

My memory of H. G. Turney, who has died recently at the age of 83, goes back 50 years to the time when I became a student at St. Thomas's Hospital and found him and H. P. Hawkins the two youngest physicians on the teaching staff. From that day to this one has thought of him almost always in that connexion for the reason that he devoted the greater part of his life and energies to the hospital and never took a very prominent part in outside professional activities. True, he was for three years a Censor of the Royal College of Physicians and held the presidency of the Neurological Section of the Royal Society of Medicine, but he was not a very regular attendant at the meetings of medical societies.

made no great contributions to medical literature, and was little known to the general public as a consultant. He belonged in fact to a group of teaching consultants in the large medical schools of London whose chief interests lay in their hospital duties and responsibilities. And in this direction his services—to patients, students, and nurses—were invaluable and warmly appreciated. Turney collected many diplomas in his younger days, both medical and surgical, and was unusually well equipped as a general physician with a strong leaning towards neurology. His mind was that of a scholar rather than of a craftsman; widely read and with a remarkably retentive memory, he had a profound knowledge of medical literature. Unlike that of his colleague Seymour Sharkey, whose successful coaching for examination purposes was very popular among the students, Turney's teaching was best appreciated by a select few who could always rely on him for good advice in regard to their reading and scientific studies. To be his house-physician was an experience of real educational value, as he never spared himself in giving help and encouragement both to his younger colleagues and to his patients.

A retiring, unselfish, generous, and learned physician, whom many generations of St. Thomas's men will look back upon with gratitude, admiration, and affection.

SIR HENRY MAUDSLEY, K.C.M.G., M.D., F.R.C.P.

News has reached this country from Australia of the death on March 5 in the Royal Melbourne Hospital of Sir Henry Carr Maudsley, consulting physician to that hospital and to St. Vincent's Hospital, and formerly lecturer on medicine and clinical medicine in the University of Melbourne.

Born in Yorkshire on April 25, 1859, the eldest son of Thomas Maudsley of Stainforth, Settle, he was educated at University College, London, graduated M.B., B.S.Lond. in 1881, and obtained the M.D. two years later after serving as resident medical officer at University College Hospital. He took the M.R.C.P. in 1884 and was elected F.R.C.P. in 1901. Making his home in Melbourne he was for some years physician and pathologist to the Alfred Hospital, and also physician to St. Vincent's Hospital. For his services during the last war he was mentioned in dispatches, created C.M.G. in 1916, and three years later K.C.M.G. and C.B.E. Sir Henry Maudsley joined the British Medical Association in 1907, and at the Annual Meeting in Melbourne in September, 1935, he held office as vice-president of the Section of Neurology and Psychological Medicine.

Dr. J. E. M. WIGLEY writes: As an old student of Sir Henry Maudsley's, of whose recent death I have just read, I would like to take this opportunity of paying a tribute to his memory. His ward rounds at the Melbourne Hospital have left a lasting impression of his sound, kindly, and sympathetic dealing with his patients, while his teaching was always essentially clinical, laying great stress on the funds of knowledge which could be obtained from careful observation. The outbreak of the last war prevented my applying for the position of his house-physician, a post always much sought after. He will always remain in my memory as a fine example of the term applied to a great leader of medicine—"a beloved physician."

G. L. EASTES, M.B., B.Sc.

George Leslie Eastes, who died at Gerrards Cross on March 4 after a long illness, was born in London on Dec. 16, 1870. The second son of George Eastes, M.B., F.R.C.S., who for many years practised in Gloucester Terrace, he was educated at Marlborough, proceeding to London University and Guy's Hospital. He took his B.Sc. with honours in physiology in 1892 and qualified M.R.C.S., L.R.C.P. in 1894, obtaining the M.B., in which he won honours in medicine and forensic medicine, in 1895. After holding the post of house-surgeon at the Sheffield Royal Hospital he became interested in clinical pathology, which was his life's work, and was appointed director of the Clinical Research Association. In 1901 he founded the Laboratories of Pathology and Public Health, which he converted into a private company in 1938 with the object of assisting medical charities, holding the position of chairman until failing health compelled him to abandon all professional activities. His interests tended more towards the public health than the clinical branches of pathology, and he was the author of several publications on bacteriological subjects. During the last war he served in the R.A.M.C. in the Middle East and held the rank of captain, being mentioned in dispatches. Dr. Eastes joined the B.M.A. in 1895, and was secretary of the Section of Pathology at the Annual Meeting held that year, and vice-president in 1933. He leaves a brother and sister.

H. S. W. writes: Clinical pathology loses in G. L. Eastes a man who perhaps did more than any other to make the medical profession "pathology minded." After a short period as director of the Clinical Research Association and pathologist to Great Ormond Street Hospital he founded the Laboratories of Pathology and Public Health, bringing to the medical profession a pathological service previously unobtainable. His work was characterized by the most careful attention to detail, which, with his great experience, caused his opinion to be widely sought. As a colleague he was ready to advise and assist his juniors in any difficulties that arose in the course of their work, and his advice was invariably sound. Although of late years he had ceased to take an active part in the working of the laboratory, he was always keenly interested in its work. His hobby was archaeology, and he wrote a monograph on Saxon remains in English churches.

We regret to announce that Dr. JAMES ORR, director of the James Mackenzie Institute for Clinical Research, died at St. Andrews on March 9. Born in 1876 at Hawick he was a son of the late Prof. James Orr, D.D., of Edinburgh, and was educated at Watson's College and Edinburgh University, graduating M.B., Ch.B. in 1899. He was for some years resident medical officer to the City Parochial Hospital, Craiglockhart, after a house-surgeoncy at the Dundee Royal Infirmary. During the last war he served in Egypt with a temporary commission in the R.A.M.C. Dr. Orr was author with Sir James Mackenzie of the well-known book *Principles of Diagnosis and Treatment of Heart Affections*, which went into a third edition in 1926, and his long connexion with the James Mackenzie Institute began when he joined the staff as physician. He obtained the M.R.C.P.Ed. in 1927 and was president of the Fife Branch of the B.M.A. in 1931–2.

Dr. ERNEST J. PEILL, who has died in Edinburgh as the result of a motor accident, was a remarkable man. He did outstanding work in China as a medical missionary for 27 years. Born in Madagascar the son of a missionary, he and his two brothers, Arthur and Sidney Peill, graduated in medicine at Edinburgh University. They all three gave themselves to missionary work in North China. Later he came home and took the F.R.C.S.Ed., devoting himself chiefly to surgical work. In 1901 he was appointed by the London Missionary Society to the charge of the Siao Chang Hospital, to which he gave much distinguished service. In 1911 he went to Peking on appointment as professor of surgery in Peking Union Medical College—the precursor of the present Rockefeller College, where he raised the tuition of surgery to a high standard. During the last war Dr. Peill volunteered for service with the Chinese Labour Corps, as he had a fluent knowledge of the language, and was sent to the Chinese General Hospital (2,400 beds) at Noyelles in France. There he was appointed officer-in-charge of the surgical division, and in this capacity did splendid work. He retired from China in 1928, and was made medical superintendent of Quarrier's Homes at Bridge of Weir, where he successfully specialized in the surgical treatment of tuberculosis. He was, however, unable to continue in this work because of ill-health. During the present war he became a leading member of medical recruiting boards in Edinburgh. He had a calm and sympathetic temperament that made him greatly beloved by all with whom he came in contact, especially the Chinese, among whom he spent the best years of his life, and to whom his courteous, philosophic, and courageous character greatly appealed. Though of a retiring nature, he had a great many friends, and was much respected and loved by all who knew him.—G. D. G.

Dr. ALASTAIR MACGREGOR, well known for his work on physiotherapy, died in London on March 13. He was born at Inverness on Sept. 1, 1864, son of the Rev. Alex MacGregor, M.A., and was educated at Inverness Academy, Edinburgh Academy, and Edinburgh University, graduating M.B., C.M. in 1885 and proceeding M.D. in 1905. Coming to London he became casualty officer and clinical assistant in the electrical department of the West London Hospital and afterwards served for 17 years as chief assistant in the electrical department of St. Bartholomew's Hospital. On the outbreak of the last war he joined a medical formation attached to the 10th French Army and later served in the electrical department of the British Red Cross Hospital at Netley, and at the King George Hospital and the Paddington Military Hospital. He was later appointed

director of the physiotherapy department of Bethlem Royal Hospital at Eden Park. Dr. MacGregor joined the B.M.A. in 1896 and was a past-president of the Electrotherapeutic Section of the R.S.M. He wrote a number of papers on diathermy and ionization and, after his appointment to Bethlem Hospital, on physical methods in mental disorder.

Lieut.-Col. Sir NORMAN GRAY HILL, Bt., whose death on active service at the age of 49 is announced, was the only son of Sir A. Norman Hill, who died in January. During the last war he won the M.C. with bar as a lieutenant in the Duke of Lancaster's Yeomanry. After resuming medical study at the London Hospital he qualified in 1923, took the M.B., B.S.Lond. in 1926, and the D.P.H. in 1929. In civil life he was deputy medical superintendent of Queen Mary's Hospital for Children, Carshalton. He became a major in the R.A.M.C.(T.) in 1935, was awarded the Territorial Decoration in 1939, and was mentioned in dispatches last September. His widow was formerly Dr. Elizabeth Bryce Kay.

Dr. PATRICK JOSEPH WALLACE died suddenly at Plymouth on March 4 from heart failure. He saw active service with the Irish Guards during the war of 1914–18 and then studied medicine at Trinity College, Dublin, graduating M.B., B.Ch., B.A.O. in 1925. Dr. Wallace served also in the present war; he was wounded and taken prisoner in 1942 and was repatriated in 1943.

Medical Notes in Parliament

National Health Service Debate in the Lords

Lord WOOLTON, in the House of Lords on March 16, moved a motion welcoming the proposals for a National Health Service and expounded the White Paper.

Lord MORAN moved an amendment regretting the absence from the White Paper of detail on important matters, in particular on the consultant service. He was puzzled by the term "comprehensive" medical service. There would not be one service, but six, controlled by different Departments; his friends had hoped all those services would be brought under one roof. Representatives of the medical profession had felt misgivings about advisory committees and Government Departments, some of which did not meet for years. They had asked the Minister of Health that the Central Health Services Council should be a statutory body and should elect its own chairman. That had been allowed. They also asked that the council should be free to publish its proceedings and that it should be elected by the profession or by organizations representing the profession and not nominated by the Minister. Those on the Representative Committee imagined these safeguards had been conceded, although nothing in the discussions bound either side. They were disappointed to find in the White Paper that the Ministry had repented of its temerity. He appealed to Mr. Willink to infuse a different spirit into the relationship between his Department and the profession. Let him trust the profession. He would never regret it. In this council he would get the disinterested advice of men practising medicine.

The other body, the Central Medical Board, had executive functions. It would have the power to direct doctors where they should go and to work by negative pressure. That was a new proceeding. He hoped there would be appeal machinery for cases likely to involve hardship. The White Paper proposed that in time of peace the Central Medical Board should have power of civil direction over every entrant into the profession —power to say to a man in the early years of his career that he should work full time for that service whether he intended to stay in it or not. These were very unusual powers, and it would be relevant to ask whether the Government intended to apply similar powers to other sections of the community. A body exercising such powers would require the confidence of the whole profession, which meant that a portion at least of its members should be elected by the profession. It should be possible to get men to work in thinly populated parts of the country by the same means which made the medical services of the Highlands and Islands of Scotland renowned.

When supervision of hospitals had been transferred to a joint board, the county and county borough councils would be left with the small change of the medical services, such as sanitation. The life of the medical officers of health would be dried up. That difficulty would be got over if those men were used for part-time service on the joint board. How was the voice of the profession to be heard locally? The Local Health Services Council would have no great power. If half a dozen members of that council were allowed to serve on the joint board, not necessarily with voting powers, they would bring technical advice to the board. That would be the most important provision in all the local arrangements.

Drift towards Salaried Service

There was reason to believe that doctors who qualified after the war would prefer to work at Health Centres, because they would not have to buy a practice. The Central Medical Board would add momentum to this drift towards Health Centres, and in no distant time the great majority of the younger men would be working in them on salary. A whole mass of the profession would then be removed from a life where rewards were conditioned by success in practice. Many men would find themselves where there was no promotion, as in the Civil Service. It would be advisable to have a material stimulant to keep men on their toes. They could have a capitation fee in addition to basic salary or extra remuneration for special work in the centre, such as child welfare or maternity work. He would like Health Centres to be set up where there was a health visitor attached and where lectures would be given on health. Neither the profession as a whole nor the public were yet prepared to welcome these centres, but they would make for greater efficiency.

What the White Paper said on the consultant service was largely pious aspirations without details. The hospital service was the keystone of any medical service and the efficiency of the hospital depended on the consultants and specialists who staffed it. There were not enough of these. If the country was to have any consultant service ten years hence the medical schools should begin training more consultants now. But those schools must know how many to train. A list was needed of the consultants in England now and where they worked. All the consultant service was to be put under the hospitals. It was disastrous to split the profession, with the consultants under one body and the general practitioners under another. He would like to see the Central Medical Board in two sections, one for the general practitioner and the other for the consultant and specialist. The White Paper was friendly to voluntary hospitals. Obituary notices generally were friendly. He saw no future for those hospitals if their friends did not concentrate on replacing that half of their income which came from patients and contributions. In the voluntary hospitals the best brains of the profession had worked in an atmosphere of intellectual freedom, sharpened by criticism. But in many municipal hospitals permission must still be asked before a medical contribution could be sent to a medical journal. To bring the municipal hospitals up to the standard of the great voluntary hospitals would take many years. Meanwhile, they must not let the latter die. He remarked that hardly one important statement in the White Paper was unqualified by "might" or "may."

Lord NATHAN submitted that the White Paper was the best possible compromise in present circumstances. There was no case for keeping the voluntary hospitals voluntary and free without securing that they would be able to get voluntary contributions. Lord Woolton had said that the contributions from central funds to these hospitals would be £6,500,000. The White Paper itself mentioned £10,000,000, a figure which had been contemplated in discussions between the hospitals.

Sound Foundations First

Viscount DAWSON OF PENN said a comprehensive medical service had been advocated by the profession from 1920. The White Paper was bold and reasonable, but some of its proposals gave him concern and some of its implementations did not conform with the principles in its earlier pages. The scheme tried to go too far and to embrace too much. The foundations should be begun first, leaving the superstructure to be erected in the light of experience. Having wisely said that Health Centres should be a matter of cautious trial and error, the White Paper later extolled the use of the Health Centre of which they had least experience—namely, for group practice. Group practice existed now. Why the desire to push the Health Centre for group practice? It was a way insidiously to whole-time medical service. Doctors in future would be likely to draw a larger proportion of their earnings in any case from salary than from fees. But that was different from saying that this new medical service had to bow the knee to a political ideology, and that sooner or later it must be universally whole-time. He saw disaster for the best type of medicine if any service were universally whole-time. A man who was sick was individualistic and would remain so to the end of time. The doctor who looked after him got fashioned in the same mould. That had to be borne in mind when considering the administrative authority.

At every level where there was an administrative body, a vocational body, not shorn of power, must be at its right hand. Half the members at least of the Health Services Council

should be freely elected by the profession, whereas, as the White Paper set out, it was to be nominated entirely by the Ministry. No body was more in danger of becoming bureaucratic than the Central Medical Board. That it had medical men on it gave no guarantee that they too would not become so. The administrative structure of the National Health Service was put too near the spider's web of the Civil Service into which, year by year, bodies which began by being independent were slowly drawn.

The areas proposed by the scheme for hospital and allied services were not large enough. He understood nearly forty were proposed. He hoped they would be got down to a smaller number, each, wherever possible, with teaching hospitals at the top. Each area was to be governed by a joint authority with an exclusively local authority make-up. How could these laymen determine questions of policy confronting a learned profession which grew more technical every year? They should have associated with them by co-option a number of professional men. There was precedent for that in other Departments of Government. He had little doubt it would be made clear that the joint authority must listen to and even ask for advice from the Local Health Services Council before any major question was settled.

For many years the country could not do without voluntary hospitals. They were, and ought to be, the dominant part of the hospital service. They should be placed as free from financial anxiety as the local authority hospitals. It was inconceivable that they would receive the same amount of charity as they did before. He thought there should be no hesitation in making them secure, and cited the guarantees offered in the Education Bill to aided denominational schools. These would receive 97% of the cost of running the schools. If schools, why not the voluntary hospitals?

In 1920 he had been chairman of a committee in which the health centre idea originated. It was then looked upon as an outpost of the hospital system. It was supposed there would be a certain number of beds. The White Paper had forgotten that provision. If general practice was without beds the service would deteriorate. There was a lack of them in parts of the country, and the Health Centre was meant to fill that gap. Separate practice, partnership, and group practice should all have access to a health centre. He was disquieted when the White Paper extolled the Health Centre for group practice without thought of the single practice or of simple partnerships.

Far too often there peeped up in the White Paper what Lord Hewart had called "the new despotism." Sentences in it practically gave the Minister power to override the whole of the vocational bodies. One such sentence said that the Health Centre "would depend in the last resort on the decision of the Minister." In that lay a power for a Minister to override everything if he were a partisan of a whole-time salaried service for everybody. It might be that in the future doctors would be paid like schoolmasters, but that would not do now. Any attempt to impose it would produce an upheaval within the medical profession, whereas the proposed service depended on the contentment of the medical profession and particularly of the general practitioners. If a full-time service were now introduced the general practitioners would be a set of mediocrities without initiative. Doctors had proved in the past that they could serve partly in private and partly in Government practice and do both well. The danger was that there would not be enough opportunity to go on with adequate success.

Lord LUKE hoped that within the insurance contribution, which would be one of the means of paying for the health service, it might be possible to continue, as "earmarked insurance," the contributory schemes for voluntary hospitals.

The debate was adjourned.

National Health Service Debate in the Commons

In the House of Commons on March 16 Mr. WILLINK moved that the House welcomed the intention of the Government, declared in the White Paper presented to Parliament, to establish a comprehensive National Health Service. He said the Government sought this approval so that it could proceed to negotiations and to legislative proposals. The scheme was not for giving charity to individuals or State help to particular classes. It did not concern itself with poverty or wealth. It was a plan to raise national health to a higher plane. Everyone would pay for a service for everyone, and by three means—taxation, rates, and the social insurance contribution. There would be no charge to those who used the service when they used it or because they used it. The present services did not form an organic whole. There was in many places no interrelation between voluntary and municipal hospitals, no sufficient link between the general practitioners and the clinics. The present services provided no personal doctor for the wives and dependants of insured persons.

The Government did not desire a doctrinaire scheme, but a natural evolution, and a scheme into which all the present elements could put their best. No patient or doctor must be dragooned into any part of this service. There must be no compulsion on doctors or nurses; professional people knew their professional job best. A certain amount of organization was necessary, and the responsibility for seeing that the whole service was there and was good must rest with Parliament, with Ministers, and with local government. The whole service must benefit from the best professional advice and guidance. It must enjoy and take note of the best professional counsels. The Government felt that free choice of doctor was fundamental. Few people wanted to be doctored by a service. The Government believed there was no case for a regimentation of the medical profession, and had no intention of seeking to establish a fully salaried State Medical Service. The whole idea of Health Centres seemed sensible to the Government, who wished it to be tried out fully and fairly. Practice under private arrangements should be neither prohibited nor isolated. If people had the right to seek private advice, doctors must be free to treat them. Nothing could be more unfortunate than to divide the profession into those who practised publicly and those who practised privately. But a doctor who had more private patients should have fewer public patients, and there was a strong case for requiring all young doctors to serve an apprenticeship with an experienced general practitioner, especially in a publicly financed service. In this proposal the White Paper and its abridged version differed. The White Paper should read: "The Board must also be able to require a young doctor entering the public service to give his full time to that service during the early years of his career in cases where the needs of the service require this."

The Voluntary Hospital

Mr. Willink passed to the hospitals. He said the voluntary hospitals were a typical, successful product of this country's methods, and would render valuable service in the new scheme. They should be paid in relation to the service they gave. The Government proposed to take them by the hand, but not to carry them. They would continue to need the support of those who wished them to maintain their independence and autonomy. The Government scheme would cover contributors against the risk of prolonged illness involving residence in hospital. That being so, contributors to the present voluntary contributory schemes would no longer have to cover that contingency, and the voluntary hospitals would be the last to suggest that such schemes should be continued merely to continue the existing basis of their finances. In 1938 payments received by voluntary hospitals through contributory schemes and direct from patients through the almoner system came to £5,300,000. The new Exchequer payment proposed to be made to the hospitals would have given them in that year, if the scheme had existed then, £6,500,000. In addition the voluntary hospitals received in 1938 for public services, almost entirely from local authorities, about £900,000. It was proposed that they should receive from the joint authority, with whom they would be in contract, a sum much larger. In addition the Government would be prepared to review the financial assistance in respect of teaching work at the teaching hospitals. Moreover, voluntary-scheme contributors had paid not merely an insurance, but to maintain a system to which they were attached. There would be scope for development of contributory schemes on other bases, and there would be gifts, subscriptions, and legacies, such as had for generations been given to the voluntary hospitals.

He did not believe the anxiety which had been shown was justified. The old conception of the local hospital was outworn. The service must plan a hospital system as a whole. There had been little criticism of the Government's area plan, worked out with local knowledge but submitted to the Department for confirmation. There would be need for more consultants and specialists and for an improvement in their distribution, but there had been little discussion with their representatives, and the report of Sir William Goodenough's Committee must be awaited. The new service would add great new duties to local government. The hospital service areas would in almost every case be larger than existing counties or county boroughs. He had hardly heard that criticized.

Sir JOSEPH LAMB asked whether the areas served by a joint committee would be the same for general hospitals and for special hospitals. Mr. WILLINK said two or three services would have fewer centres than the number of hospital areas. In cancer treatment and neurosurgery the centre would probably be linked with a university or teaching hospital. Apart from very specialized services of that kind, the areas would cover all hospital services.

"Those in Favour"

Sir E. GRAHAM-LITTLE said he proposed to try to represent the views of the medical profession. Professional people had

never been consulted in the framing of this scheme. A body called the Representative Committee of the medical profession had met the Minister of Health in March, 1943, and were told what had been decided. In July, 1943, the chairman of one of the larger committees of the B.M.A. authorized a statement that negotiations must be based on acceptance of a Cabinet decision that a single unified health service covering all the population would be instituted, and that local administration would be under local authorities responsible to a Minister. At a meeting in London the Minister informed the Representative Committee that it was proposed to secure control of the medical profession "in order to keep a firm hand on the issue of certificates." The proposals in the White Paper followed the decision of the Cabinet as announced. It would be impossible to work a scheme if those operating it intensely resented the conditions imposed on them.

Dr. SUMMERSKILL intervened to say that Sir Ernest represented the views of a small section of the profession. Dr. RUSSELL THOMAS: "Of the vast majority."

Sir ERNEST said that less than 10% of those who would be asked to work this scheme favoured it. The total on the *Medical Register* was 70,000, of whom 50,000 were in practice. About half the general practitioners were serving in this country and half abroad. Of doctors questioned in cities and large areas of this country 90 to 95% were against proposals involving lay control of the profession. The Representative Body of the B.M.A. at a meeting in September, 1943, rejected, by 200 to 10, the proposed reduction of the profession to a salaried medical service. A more recent questionary sent to 30,000 practitioners in active practice in this country resulted in 70% opposition to lay control by a central authority. Dr. MORGAN said the questionary dealt not with policy or principles but with details of the scheme.

Continuing, Sir ERNEST said the B.M.A. proposed to consult its members who were serving over-seas. It would be difficult for any serving officer to answer its questions with due consideration. The Health Centre had attractive features, but was it possible for there to be a free choice of doctors after the institution of the Health Centre? The prospect of a number of specialists in connexion with these centres was illusory. The prospect of any worth-while private practice surviving was not hopeful. At present, under Defence Regulations, doctors were forbidden to transfer their services. Was that type of direction going to be perpetuated? In recent years, by development of contributory schemes, the voluntary hospital system had become a widely appreciated co-operative system of medical service. The proportion of staff to patients was much larger at the voluntary hospital, the comparison being about 10% at the voluntary hospital and 1% at the public hospital. Voluntary hospitals were centres of research because consultants gave their time. Under what conditions would these consultants work if the Government scheme were adopted? General practitioners would be under the strict rule of the Central Medical Board.

B.M.A.'s "Disagreement Only in Detail"

Dr. HADEN GUEST said he did not claim to represent the medical profession and denied Sir Ernest Graham-Little's claim to represent any large part of it. Sir Ernest did not represent the views of the B.M.A. Most medical persons would agree that there could be as free choice of doctors in a Health Centre as there was elsewhere. The White Paper was a reasonable basis for discussion. He hoped the Government would let the House know whether private practices which were set up in the future would be saleable or not. The period during which that commercial element in practice should continue should be as limited as possible. Ultimately every doctor, nursing service, and hospital should be a combination of service to the State with the retention of voluntary initiative in certain ways. If the voluntary hospitals stood out from the scheme their influence would dwindle. He was convinced that the leaders of the London teaching hospitals would throw their authority into a unified hospital system. The B.M.A. only disagreed with the White Paper in matters of detail.

Mr. CRAIK HENDERSON thought there should have been longer after the publication of the White Paper for the views of the medical profession, the voluntary hospitals, and the public to be ascertained. It was unjust to ask the voluntary hospitals to come under a joint authority where all the power would be given to the body owning the alternative form of hospital service. Voluntary hospitals should have the right to nominate their own representatives to the Central Health Services Council. A central hospital advisory committee containing representatives of the voluntary and State hospitals should be set up to consult with the Minister. A local joint hospital committee for each area should also contain representatives of voluntary and State hospitals. If necessary there could be a neutral chairman. Legislation should lay down the sum to be paid by local authorities in respect of the number of beds in voluntary hospitals. There should be a Hospitals Grants Committee analogous to the University Grants Committee.

Mr. ALEXANDER WALKDEN, speaking on behalf of the Labour Party and the T.U.C., said he had been asked to congratulate Mr. Willink on the White Paper, which would be the basis of a Government Bill. The new plan would be specially welcomed by the women of the country. Young doctors and medical students whom he had seen welcomed the idea of full employment in Health Centres.

Dr. HOWITT welcomed the White Paper and said the great majority of the medical profession would do so. It showed the contributory scheme was dead, but the voluntary hospitals were not going to be shut. When replies were received in July to the medical questionary they would show that the vast majority of the medical profession did not want a great increase in the salaried services. To run this National Health Service satisfactorily there must be a 50% increase of doctors, but the White Paper as it stood would not attract the best people into the profession. The Minister must make the profession attractive and leave ample scope for initiative, hard work, and independence.

Dr. MORGAN declared that the White Paper was a step in the right direction, but it did not propose a comprehensive national health service. The stress was on the medical side at every stage; public health and social medicine had been left out. Not a word was put down about a preventive policy in industrial medicine. When doctors looked at existing medical services they had grounds for their misgivings about bureaucrats. The Colonial Medical Service was one of the worst in the world.

Mr. STOREY said it was hard to refrain from the conclusion that those who framed the White Paper proposals shaped the scheme so that the voluntary hospitals could continue in business only if prepared to provide a service at less than cost, so that, at no distant date, it would be possible to acquire at scrap prices the voluntary hospitals, their buildings and equipment, and to build them into a State service. Sir JOHN GRAHAM KERR said the prospect of mounting step by step in a safe, organized profession would be less attractive to brilliant young men than the present system in the medical profession. Mr. DOUGLAS remarked that nothing in the White Paper was actively directed to dealing with the cases of disorder which were not recognized as illness and laid the foundations of permanent disease.

The debate was adjourned.

Debate Renewed

Miss HORSBRUGH on March 17 reopened the debate. She said Dr. Howitt had referred to the supply of doctors. The Government had looked into that. There was at present about one doctor to 2,000 of population, but these doctors were not evenly distributed. There were far too few consultants and specialists. Wartime admissions to the medical schools had been at the rate of 2,300 a year. The Minister would be responsible for the Central Medical Board, and he was also responsible to Parliament. There had never been any policy of direction for doctors. The doctor could set up a private practice wherever he liked. There was no control of private practice. He could, if accepted, do full-time public service. He could do part-time public and part-time private practice. But if there were a shortage of doctors in an area to which a young doctor wanted to go to do part-time public and part-time private practice he might be told that he must do full-time public practice there, but that there were many other opportunities in the country and he could choose one of them. Members had asked if there were to be no Health Centres where there were beds. The Government wanted experiments with different types of Health Centres.

A great deal of the previous discussion had turned on hospitals. The Emergency Medical Service had enabled the Government to bring the hospitals, both municipal and voluntary, into a common service, with interhospital transport, and specialists at the different hospitals. Each hospital had kept its identity. Similarly the Government wished to bring all the hospitals of the country into the new scheme. Parliament was now making the contributory scheme for voluntary hospitals a universal and compulsory one. She could not agree that the money should be paid to an individual hospital, but she believed that gifts from grateful patients would continue. The hospitals, if they wished, could still have paying beds. She believed that the Government was helping the voluntary hospital to continue as an independent unit. The Government must have further discussions on how payment should be made to the voluntary hospitals, and might include a pooling scheme. There would be Government inspection of both municipal and voluntary hospitals to see a proper standard was maintained. All types of hospitals would contract to do particular work, for which they would receive payment in addition to flat-rate payment. The hospital could accept or refuse the contract. If there were

not enough beds in an area the joint board must supply them, if necessary by a new hospital. She thought the hospitals would be pleased to come into the plan. She believed that young men and women would have far greater opportunities in medicine. They would not be hampered by patients' inability to pay. Schemes of research, training, and teaching would give the best opportunities.

Mr. GREENWOOD said a bigger personnel would be required in the profession and provision for medical teaching must be extended. Existing teaching hospitals would be inadequate. He would like to see more prominence given to mental treatment. The medical profession existed for the public good, and doctors could not be the final factor in determining the future of the scheme. Nor could the voluntary hospitals. The Labour Party accepted the scheme as a substantial instalment in a public health service. Mr. MESSER said it would be better for the general practitioner who did not want to come into the scheme to keep out of it. He would not refuse that practitioner the right of following up his patients who came into hospital.

End of Private Practice?

Sir HENRY MORRIS-JONES said he would have preferred the scheme to be confined to those who needed it. If the scheme succeeded there would be a practical abolition of private practice. If private practice still flourished five years after the introduction of the scheme that would mean that the scheme was a failure. Dr. SUMMERSKILL called the scheme a coalition compromise. It was planned to cure disease rather than to prevent it. The scheme would accentuate social distinctions in the treatment of disease. When they gave the doctor a salary they got the best out of him. To allow publicly paid doctors to take fees was a kind of thing not allowed in any Department of Whitehall and should not be allowed in the medical profession. The Government hoped to starve the voluntary hospitals into submission, but the process might take a long time. Scottish members continued the debate. Major LLOYD asked what would be the position of the mental hospitals in Scotland of a voluntary character, seven of which had Royal Charters. Their beds were about a quarter of all the sick-beds in Scotland. Were they to be taken into full partnership by the joint boards or the regional councils?

Mr. TOM JOHNSTON, winding up the debate, said the proposals had been agreed to by all sections of the Government. The Government proposed no compulsion on doctors to come into the public service. The new service could not be put into operation all at one time. It was proposed to discuss the whole question of payment, including options, with the medical profession. Whatever system was adopted the number of patients which a doctor could undertake must be limited. But if the doctor stayed out he could take any number of patients. He thought the selling of practices a degrading system. It would be discussed with the profession. There was no question of stopping all private practice.

Of voluntary hospitals, one-quarter were run in a pre-war year with a deficit. Flag days for hospitals were not a commendable way for a great service to finance itself. There must be a better way. Scotland had seven large base hospitals, with about 7,000 beds, for war emergency services. These would make a great addition to the hospital service which the Government hoped to have in the near future by agreement of all concerned. Co-operation had been secured in one or two areas. In Aberdeenshire and Kincardineshire, and in Gloucestershire, there were arrangements for transfer of convalescent patients from key hospitals to other hospitals. There was no Government antagonism to voluntary hospitals. The Government invited them, as autonomous organizations, to co-operate in making the new health service a success. They appeared willing to co-operate. The voluntary hospitals in Scotland had agreed for numbers of their waiting-list patients to be treated in the State hospitals. Some 26,000 patients from the waiting lists had been thus treated.

The House then carried the resolution moved by Mr. Willink.

Nutrition and Infant Mortality in Scotland

Opening a debate on March 8 about nutrition and infant mortality, Mr. TOM JOHNSTON said the total consumption of liquid milk had risen 34% since 1939. In Scotland 67% of the whole school population received milk at school; in England and Wales 78% of the children at school. Sir John Orr had said a survey of working-class families in industrial towns in Scotland had shown that there was a definite improvement in the health value of their diets, the average intake of some of the important vitamins and minerals being over 20% higher than in the pre-war years. Over a fifth of the children attending school were given a midday nutritious meal in Scotland. In England the figure was 29%. Vegetable consumption had remarkably increased. In Glasgow in 1943 boys entering school life were 0.40 in. taller and 1¼ lb. heavier than boys who entered school life in the pre-war quinquennium. Girls increased 0.28 in. in height and nearly 1 lb. in weight. Tuberculosis, however, increased because of deterioration in the housing conditions and not nutrition.

Infant mortality in Scotland was decreasing. Last year it was 65 per 1,000 births, the lowest in the annals, but maintained a ratio 30 to 40% higher than in England. The report from the Scientific Advisory Committee on this subject had aroused widespread interest. Despite criticism that it was unduly weighted in favour of nutritional aspects of the problem, it was a report of great competence. Bad housing, while a high contributory factor to infant mortality, was by no means the sole one. He would like to draw the attention of local authorities in Scotland to the fact that in January of this year the intake of welfare foods for mothers and children was still lower than the corresponding figures for England and Wales 7% worse in cod-liver oil, 20% worse in vitamin A and D tablets, and 18% worse in the intake of orange juice. That matter should be corrected by the medical officers of health concerned.

Deaths from Infections: Special Inquiry

Scotland had more maternity hospital beds to births than England, and more births in institutions. During the war also the number of hospital beds in Scotland had increased by 50% to 2,260. In Glasgow 55% of births were in hospitals and nursing homes (40% in 1938), in Edinburgh between 60 and 70%, in Dundee 77%, in Aberdeen 75%. Increased use was being made of ante-natal clinics. In Glasgow last year about 77% of expectant mothers attended ante-natal clinics. About one-quarter of the total deaths in the first month of babyhood were due to infections. In a consecutive series of 25 post-mortem examinations of children dying during the first month in the Maternity Pavilion, Edinburgh Royal Infirmary, 27% of the deaths were judged to be due to infection. At one time there were similar outbreaks in English and American hospitals. He was inviting the Scientific Advisory Committee to pursue as a matter of urgency an inquiry into this aspect of the problem.

Mr. Johnston then summarized what his Department was doing upon the conclusions of the Orr report as follows: (1) They were asking for a detailed examination of why 25% of the deaths of newly born babies are caused by infections. (2) They were taking every step to prepare the way for a vast increase in sanitary and healthy housing accommodation. (3) The local authorities were doing their utmost to increase the intake of certain vitamin products by mothers and babies, to increase the number of qualified health visitors and house-helps and the quality and use of the clinic services and the number of maternity beds. (4) The Central Council for Health Education would assist in every way possible to inculcate the advantages of high standards of personal hygiene and conduct.

Mr. BUCHANAN said the Government should proceed with housing now. Glasgow had a population of 1,000,000, half of whom had no baths and one-third of whom shared lavatory accommodation with other families. The reforms recommended by Mr. Johnston were not big enough. Mrs. TATE said the general level of well-being of the people was not high. They lost their teeth at an early age. A vast proportion were tired and listless, pallid, and not in an adequate physical condition. In view of the housing conditions she marvelled that women had courage to try to cook. Fresh milk was often not drunk because of the lack of any place in which it could be stored without going bad. Why were large supplies of the few drugs available given to the vested interests which produced quack medicines? Did anyone test these medicines to see what the contents actually were?

Estimated "Hard Core" of Infant Deaths

Dr. RUSSELL THOMAS recalled the infant mortality figures for England, Wales, and Scotland. Those for Scotland were only exceeded in Europe by countries like Spain, Portugal, and Hungary. Bronchitis and bronchopneumonia accounted for the large number of deaths in children under 1 year and were frequently associated with other infectious diseases. To control this death rate mothers must be educated in the care of infants. Parliament must see that the nutrition of mothers before and after the birth of the child was maintained on a high level. If they could proceed with these health measures and with housing, the infant mortality from infection would be reduced to a very low level. He thought infant deaths from this cause could be reduced to 12 per 1,000. They would have to leave the figure of 6.1 per 1,000 as a hard core of congenital malformation. Infant deaths from congenital debility had been reduced in England and Wales from 15 per 1,000 in 1906–10 to 2.1 in 1937–40. In Scotland the figure had not gone down in the same way, and was 7.6 in 1937–40. It should be possible to reduce it to the English level. There had been an increase in mortality

due to injuries at birth: in Scotland the increase was from 1.3 to 3 and in England from 1 to 2.5. The ordinary confinement was now normally attended by the district nurse, and the doctor was only called to the difficult ones. If he lost the experience which he would get from simple confinements a lack of skill might possibly be developing in the practitioners of the country. Dr. Thomas put the hard core of infantile mortality from inevitable accidents at birth to about 2. In death resulting from premature birth there had been little improvement from 1906 to 1940. He suggested that 14.4 was the figure beyond which we could not go in saving life in premature birth until knowledge had increased. Over the whole field he suggested that 36.5 per 1,000 should be the hard core of deaths in the first year of life in England and Wales, comparing with the New Zealand figure of 32.7. The difference in these figures was accounted for by the greater amount of respiratory disease in this country.

Dr. EDITH SUMMERSKILL contended that all other types of mortality apart from cases of congenital malformation could be traced to poverty, bad housing, under-nourishment, and other such conditions. Few surveys had been made on the physical condition of the expectant mother, but when one was made of families divided into five groups by incomes the report was that only the highest groups approached the necessary standard in protein and iron and only the highest in calcium. The supply of vitamins A, B, and C was inadequate except in the highest group. The position became progressively worse towards the lowest income group. If this kind of thing was allowed to exist women would not be able to resist tuberculosis. Some infection was the cause of death in 25% of cases of infant mortality, and practically all the children were bottle-fed.

Major MARKHAM pointed out that two months ago Lord Woolton, in a speech to the Parliamentary Science Committee, gave that committee to understand that the national diet had been so reorganized that it was completely free of vitamin deficiency, and, in addition, other elements such as calcium and iron had been added to the daily diet. Immediately after that speech the Boyd Orr report was published, based on pre-war facts and figures, and had banged the old nutrition drum. What the House would have welcomed in the report was an up-to-date analysis of the causes of infant mortality. For that report to close the evidence at Sept. 3, 1939, was a crime against the mothers of Scotland and England. He regretted that no reference had been made to climate or to the control of temperature indoors, which caused a rise in infant mortality of 52 to 100% every winter.

Miss HORSBRUGH, replying to the debate, said the Ministry agreed that housing conditions in England and Wales, and above all in Scotland, were appalling and had got worse during the war. There was no labour and material for the building programme while the war was being fought. All that could be done was to see that after the war there was not the delay there was after 1918. Credit should be given to those who in these war years had worked hard—the health visitors, the nurses, etc. It was hardly fair to say the services were bad. The Government wished to see them better, but could be proud of the work that had been done. It was remarkable that in the last year in England 96.5% of the mothers who gave birth to children were visited in their homes within a week. Beds in maternity homes and hospitals had been increased by 3,000, and England and Wales had in institutions accommodation for at least 50% of the mothers of the country. Mr. Johnston had given alarming figures on infection in hospital. To have a maternity home or hospital in any way overcrowded when there was not sufficient isolation or insufficient staff to make isolation good was more dangerous than to have children born at home. A draft circular was going out to local authorities on provisions which could be made in wartime to make premature births as normal and the death rate as low as possible. In this, hospitals were doing wonderful work, but what was needed was to see how prematurity could be prevented. Where attack had to be made was on the mortality during the first month after birth. In one place where neonatal mortality was high the Ministry was arranging an inquiry into the nutritional standard. Such inquiries had been made in many parts of the country and many hundreds of expectant mothers had been examined, but as yet the Ministry had found that the nutritional standard was not bad. It was disappointing that only 50% of the mothers and babies in England to whom fruit juice was available took it; only 25% took the cod-liver oil, and only 39% the vitamin tablets. The Advisory Committee of the Ministry had dealt with the subject of the premature baby and rickets, and a report on rickets would shortly be published by the British Paediatric Association. The investigation of rickets was reassuring, for it was one of the diseases which had been thought likely to increase in wartime.

Universities and Colleges

UNIVERSITY OF EDINBURGH

It is announced that Prof. P. S. Lelean, C.B., C.M.G., F.R.C.S., will retire at the end of this year from the Bruce and John Usher Chair of Public Health in the University of Edinburgh, which he has held since 1926. During his tenure of the professorship he has greatly widened the scope of the teaching in public health, introducing instruction in child welfare, hygiene at different periods of life, and the various social conditions that have a bearing on the health of the community; he has also increased the co-operation of the Medical Officer of Health for the city and his staff in connexion with the public health course. Prof. Lelean served, as a regular officer of the R.A.M.C., in the South African War, in India, and throughout the war of 1914–18. During his period of office as professor of hygiene in the Royal Army Medical College at Millbank he trained many officers, both regular and temporary, in military hygiene. He retired from the Corps in 1922 with the rank of brevet colonel.

UNIVERSITY OF BIRMINGHAM

A course of six lectures on industrial medicine for industrial medical officers and others will be held at the Medical School, Hospitals Centre, Birmingham, 15, on the undermentioned dates; the lectures will take place at 4 p.m. in the Physiology Lecture Theatre: April 5 and 6, "Tuberculosis in Industry," by Dr. Halliday Sutherland. April 12, "The Education of Doctors for Industry," and April 13, "The Prevention of Disease in Industry," by Dr. Donald Hunter; April 19 and 20, "Factory Hygiene: Assessment of Standards and Methods of Investigation," by Dr. Donald Stewart. The fee for the course is £1 1s., which is payable in advance to the Secretary of the University, Edmund Street, Birmingham. Nurses engaged in industry are invited to join the course at a fee of 5s.

UNIVERSITY OF SHEFFIELD

A legacy of £1,000 bequeathed under the will of the late Emeritus Professor R. J. Pye-Smith, who held the chair of surgery in the university until his retirement in 1910, has now been received by the University of Sheffield.

The following candidates have been approved at the examination indicated:

M.B., CH.B.—*Parts II and III*: [1]E. S. Machell, E. S. L. Allott, G. D. Banks, Margaret A. M. Howard, Helen N. Mellanby, N. A. Vincent.

[1] With second-class honours.

UNIVERSITY OF DUBLIN

SCHOOL OF PHYSIC

The following candidates have been approved at the examination indicated:

M.B., B.CH., B.A.O.—D. H. Draper, C. J. Dugdale, C. W. C. McCreery, M. W. ffrench-O'Carroll, R. M. C. Tyner, I. H. R. Woodrow.

The Services

Capt. (Acting Major) J. P. Fletcher, R.C.A.M.C., has been awarded the M.C. in recognition of gallant and distinguished services in Italy.

The Shahinshah of Iran has conferred the Order of the Crown on the following officers in recognition of distinguished services in the cause of the Allies: Lieut.-Col. (temp. Col.) D. W. E. Burridge, R.A.M.C. (4th Class); Lieut.-Cols. E. S. S. Lucas and R. K. Tandon, I.M.S. (5th Class).

CASUALTIES IN THE MEDICAL SERVICES

Previously reported missing at sea, now presumed killed in action.—Major R. A. Foucar, R.A.M.C.

Reported missing, believed killed.—Surg. Lieut. F. M. McRae, R.N.V.R.

Died.—Surg. Cmdr. A. W. Cocking, R.N.

DEATHS IN THE SERVICES

Wing Cmdr. RICHARD STANLEY TOPHAM, who died suddenly on March 10, was born in July, 1890, and studied medicine at Leeds University. He qualified M.B., Ch.B. in 1915 and was commissioned in the R.A.M.C. in May, 1916. He served with the Army until 1918, when he was appointed to the Medical Branch of the Royal Air Force. He obtained the D.P.H.Camb. in 1920 and the D.M.R.E. in 1925. He was placed on the retired list at his own request in 1927, and held important radiological appointments at Chester. On the outbreak of the present war he returned to duty with the R.A.F. and early in 1940 was appointed senior medical officer with charge of the hospital at a large R.A.F. station in England.

No. 9

INFECTIOUS DISEASES AND VITAL STATISTICS

We print below a summary of Infectious Diseases and Vital Statistics in the British Isles during the week ended March 4.

Figures of Principal Notifiable Diseases for the week and those for the corresponding week last year, for: (a) England and Wales (London included). (b) London (administrative county). (c) Scotland. (d) Eire. (e) Northern Ireland.

Figures of Births and Deaths, and of Deaths recorded under each infectious disease, are for: (a) The 126 great towns in England and Wales (including London). (b) London (administrative county). (c) The 16 principal towns in Scotland. (d) The 13 principal towns in Eire. (e) The 10 principal towns in Northern Ireland.

A dash — denotes no cases; a blank space denotes disease not notifiable or no return available.

Disease	1944					1943 (Corresponding Week)				
	(a)	(b)	(c)	(d)	(e)	(a)	(b)	(c)	(d)	(e)
Cerebrospinal fever	53	8	19	5	4	91	6	39	4	5
Deaths		1	—				1	1		
Diphtheria	681	35	176	110	25	827	46	215	103	32
Deaths	13	1	1	3	—	15	—	4	1	1
Dysentery	218	33	82	—	—	68	12	38	1	—
Deaths				—	—	—			—	—
Encephalitis lethargica, acute	1	—	1	1	—	1	—	—	—	—
Deaths		—					—			
Erysipelas			35	9	3			70	7	1
Deaths		1					—			
Infective enteritis or diarrhoea under 2 years				7					24	
Deaths	56	6	9	15	2	48	8	4	14	2
Measles	1,987	279	218	425	1	19,200	1,421	477	11	45
Deaths	2	—	1	6	—	22	3	—	—	1
Ophthalmia neonatorum	69	6	20	—	—	103	4	25	—	2
Deaths										
Paratyphoid fever	4	1	3(B)	—	—	7	—	—	1	—
Deaths		—	—	—	—	—	—	—	—	—
Pneumonia, influenzal*	983	63	16	12	10	1,450	72	26	14	9
Deaths (from influenza)	50	3	4	3	2	79	8	8	—	2
Pneumonia, primary			282	24				411	19	
Deaths		50		11	11		—		12	15
Polio-encephalitis, acute	4	—				2	—	*		
Deaths		—					—			
Poliomyelitis, acute	6	—	—	—	—	4	1	1	2	—
Deaths		1					—			
Puerperal fever		2	9		1		6	17		—
Deaths										
Puerperal pyrexia†	154	6	14	1	3	179	14	16	3	1
Deaths		—					1			
Relapsing fever	—	—			—	—	—			2
Deaths										
Scarlet fever	1,997	118	223	25	77	1,928	148	268	49	50
Deaths	2	—	—	—	—	1	—	—	—	—
Smallpox	8	—	—	—	—	—	—	—	—	—
Deaths				—	—				—	—
Typhoid fever	3	—	—	5	3	2	—	4	20	3
Deaths	1	—	—	—	—	2	1	—	—	—
Typhus fever	—	—	—	—	—	—	—	—	—	—
Deaths				—	—				—	—
Whooping-cough	1,914	187	103	49	11	1,876	197	176	35	19
Deaths	13	4	1	1	1	9	2	2	3	—
Deaths (0–1 year)	470	73	70	54	28	412	42	69	47	34
Infant mortality rate (per 1,000 live births)										
Deaths (excluding still-births)	5,962	1,153	645	278	175	4,948	773	609	232	148
Annual death rate (per 1,000 persons living)			14·8	18·1	‡			13·7	15·3	‡
Live births	7,277	894	865	485	258	6,489	793	851	445	250
Annual rate per 1,000 persons living			17·6	31·7	‡			17·4	29·3	‡
Stillbirths	244	33	38			215	14	25		
Rate per 1,000 total births (including stillborn)			42					29		

* Includes primary form for England and Wales, London (administrative county), and Northern Ireland.

† Includes puerperal fever for England and Wales and Eire.

‡ Owing to evacuation schemes and other movements of population, birth and death rates for Northern Ireland are no longer available.

EPIDEMIOLOGICAL NOTES

Discussion of Table

In *England and Wales* during the week there were rises in the notifications of measles by 191, acute pneumonia by 125, whooping-cough by 104, and scarlet fever by 49; cerebrospinal fever was down by 22 cases and dysentery by 16.

Whooping-cough was more prevalent in the south, Suffolk notifying 43 more cases than last week, Sussex 36, and London 23; the only drop of any size was in Yorks West Riding, where 30 fewer cases were reported. The increase in measles was due mainly to local outbreaks in a few areas. The counties with the largest increases were Lancashire with 119 more cases, mainly in the urban districts; Gloucestershire with 68 more (Stroud R.D. 54, East Dean R.D. 16); Northumberland with 66 more (Newcastle-upon-Tyne C.B. 32, Gosforth U.D. 37). A fall of 61 was recorded in Kent.

Dysentery notifications exceeded 200 for the fourth consecutive week. In London there was a rise from 14 to 33. The chief of the other centres of infection were Lancashire 32, Surrey 18, Essex 17.

There have been no new cases of smallpox, the total to date numbering 11.

In *Scotland* there were 22 more notifications of measles and 33 of acute primary pneumonia, but there were 51 fewer cases of whooping-cough and 36 fewer of scarlet fever. The notifications of dysentery rose by 3.

In *Eire* the notifications of measles went up by 22: 350 of the 403 cases were reported in Dublin C.B.

Week Ending March 11

The notifications of infectious diseases in England and Wales during the week included: scarlet fever 2,215, whooping-cough 1,906, diphtheria 624, measles 2,098, acute pneumonia 1,178, cerebrospinal fever 90, dysentery 208, paratyphoid 3, smallpox 2. In the great towns there were 42 deaths from influenza.

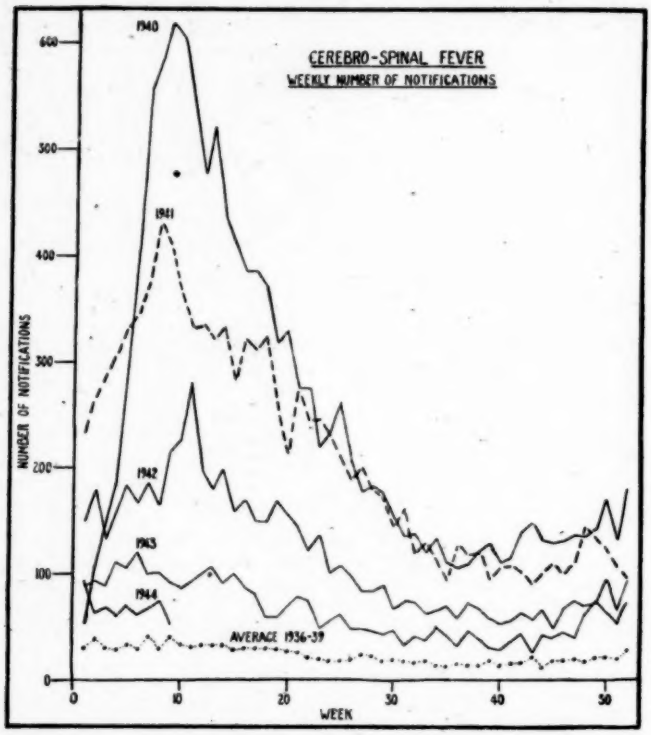
Quarterly Returns for Scotland

The birth rate during the fourth quarter of 1943 was 17.9 per 1,000, and was the highest rate recorded in a December quarter since 1931. Infant mortality was 73 per 1,000 live births—7 above the rate for the corresponding quarter of 1942 and 1 above the average for the five preceding fourth quarters. Stillbirths were equivalent to 36 per 1,000 total births. The general death rate was 15.0, being 2.3 above the five-years average for the December quarter. This increase was mainly due to influenza, bronchitis, and pneumonia, and was greatest in the older age groups. Comparison with the five-years average showed an increase of 2% at ages 25–34, 5% at ages 35–44, 23% at ages 75–84, and 36% at ages 85 and over. 821 deaths were attributed to influenza, the largest number recorded for any fourth quarter since 1918. 57 more deaths were recorded from tuberculosis than in the fourth quarter of 1942. The death rate from all forms of tuberculosis was 75 per 100,000, and that from respiratory tuberculosis was 58. These rates were 7 and 5 above the five-years average.

The preliminary return for the year included in the report shows that the birth rate was 18.9 per 1,000, being 1.2 above the average for the five preceding years. The number of births was the largest recorded since 1928. The infant mortality was 65 per 1,000 live births—9 below the five-years average and the lowest rate ever recorded in Scotland. The stillbirth rate was 36 per 1,000 total births. Illegitimate live births formed 7.6% of all live births, the highest rate since 1929. The general death rate was 13.3 per 1,000—0.2 below the five-years average. Deaths from epidemic diseases numbered 1,947, and were 889 more than in 1942. The increased incidence was due to influenza, which rose from 308 to 1,155, and whooping-cough, which increased from 92 to 305. Decreases were recorded for cerebrospinal fever 180 to 127, scarlet fever 24 to 22, diphtheria 290 to 231, measles 144 to 88. The deaths from diphtheria and scarlet fever were the lowest numbers ever recorded. The maternal mortality rate was 3.7 per 1,000 total births—0.7 below the five-years average and the lowest rate ever recorded in Scotland. Deaths from malignant disease numbered 8,659, being 385 above the average and the largest number ever recorded. A part of this increase may be due to the ageing of the population. Deaths from respiratory diseases also showed an increase, mainly due to pneumonia and bronchitis. The death rates from these two diseases were 63 and 53, compared with 56 and 49 in the preceding year. The marriage rate, 7.6 per 1,000, was 1.9 below the rate for 1942 and is now at the pre-war level.

Cerebrospinal Fever

The notifications of cerebrospinal fever during the pre-war years showed a seasonal rise, without a definite maximum, during the first half of the year, and the cases were approximately twice those in the second half-year. The range of the notifications was roughly 20–40 and 10–20 in the two half-years. Following the outbreak of war cerebrospinal fever reached epidemic proportions; a maximum of over 600 cases was recorded during the ninth week of 1940. Although the



incidence steadily decreased, it never fell below 5 to 6 times the pre-war level during the year. In the beginning of 1941 the cases rose rapidly to a maximum, and the trend of the disease was similar to that of the preceding year. In 1942 the notifications followed a similar curve but at a lower level. No distinct rise to a maximum occurred in 1943, and the trend of the incidence curve approximated in shape to that of peacetime but at a higher level. The decline in incidence has been continued during the present year, but it is still above twice the pre-1940 level. The course of this disease since the outbreak of war compared with the average of the four immediate preceding years is shown in the graph.

Medical News

The new Fellows of the Royal Society elected on March 16 include Bryan Austin McSwiney, professor of physiology, St. Thomas's Hospital Medical School; Sir Jack Cecil Drummond, professor of biochemistry, University College, London, and chief scientific adviser to the Ministry of Food; Alexander Thomas Glenny, immunologist, Wellcome Physiological Research Laboratories, Beckenham; William Ogilvy Kermack, research chemist, Royal College of Physicians of Edinburgh; and Guy Frederic Marrian, professor of medical chemistry, University of Edinburgh.

At the meeting of the Medical Society for the Study of Venereal Diseases to be held to-day (Saturday, March 25) at 11, Chandos Street, Cavendish Square, W., at 2.30 p.m., Dr. Nora Wattie will open a discussion on the prevention of pre-natal syphilis. At the meeting on Saturday, April 29, the subject for discussion will be "Results of Treatment of Neurosyphilis."

The sixty-fourth annual meeting of the Mental After-Care Association will be held at Burlington House, Piccadilly, W., on Wednesday, March 29, at 2.45 p.m., under the presidency of H.R.H. Princess Arthur of Connaught. The speakers include Sir Otto Niemeyer, chairman of the Provisional National Council for Mental Health, Dr. J. Bram, of the Polish Medical Services, and Col. Henry Yellowlees, M.D., chairman of the Association. All interested are cordially invited to attend.

Prof. Arnold Sorsby will deliver lectures (1) on blindness in childhood, and (2) on the sulphonamides in ophthalmology at 4 p.m. on March 28 and 30, at the Royal College of Surgeons, Lincoln's Inn Fields, London, W.C.2.

The annual meeting of the Medical Superintendents' Society will be held at B.M.A. House, Tavistock Square, London, on Saturday, April 1, at 2.30 p.m.

A Swiss Society for Tropical Medicine has been founded at Berne under the presidency of Dr. P. Thillot of Lausanne, and an Institute for Tropical Medicine at Basle.

Dr. Jolyot Curie, who was awarded the Nobel prize for chemistry in 1936 together with his wife, has been elected a member of the Paris Academy of Medicine.

Letters, Notes, and Answers

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ANY QUESTIONS?

Vapour Density of Trichlorethylene

Q.—*What is the vapour density of trichlorethylene?*

A.—The vapour density of a substance is the weight in grammes of a litre of the vapour at N.T.P., divided by 0.09, the weight in grammes of a litre of hydrogen at N.T.P. In general terms, the molecular weight of a substance is twice its vapour density. The molecular weight of trichlorethylene is 131.38: therefore its vapour density is 65.7.

Solids in the Infant Diet

Q.—*At what month or weight should solid food be introduced into a baby's diet? Should a baby receive solid food at 4 months, as some authorities advise? Hitherto I have waited till 6 months or a weight of 15 lb. before advising solids, but health visitors returning from refresher courses are discussing earlier solid feeding.*

A.—It all depends on what is meant by solids. It is a sound practice not to give solids until the baby is 6 months old, if by that is meant a meal of potatoes and gravy with milk pudding and rusks; but from the fourth to the sixth month a little suitable vegetable purée may be given daily, or a little thin cereal introduced into one or two of the milk feeds. The trouble is that most people when given an inch take an ell, and if too much cereal is eaten by a young baby it will interfere with the absorption of calcium from the bowel. This answer begs the question, "What is suitable vegetable purée?" Mothers should be encouraged to find out intelligently for themselves.

Wound Shock and Internal Haemorrhage

Q.—*Is it possible to teach first-aiders to distinguish between the symptoms and signs of wound shock and of internal haemorrhage? Is, for instance, apathy characteristic of the former, restlessness of the latter?*

A.—Most informed opinion now inclines to the view that haemorrhage is the major factor in the production of shock. The clinical picture is therefore essentially identical in simple haemorrhage and traumatic shock. Trauma, however, complicates the picture. Reflexes from the injured area, the pain or infection of peritonitis, the mechanical circulatory difficulty and the poor blood-oxygenation of chest wounds, the vagal stimulation and vasomotor-centre effects of head injuries may be added to the effects of simple bleeding. It is difficult enough even for the expert to unravel the complicated puzzle in any given case of severe injury, and it is certainly impossible to give any clear differentiation to first-aiders. They may be made to understand, however, that, while haemorrhage alone can produce the picture of shock, severe trauma is likely to make the condition even worse. The mental state seems to bear some relation to the blood pressure, apathy being present when the blood pressure is very low, and restlessness when the pressure is higher. The change from apathy to restlessness is often seen as the blood pressure recovers with transfusion.

Origin and Treatment of Threadworms

Q.—Can you dispel some of my ignorance of threadworms? Where do they originate? Puppies have them when their dams do not. Are the worms in radishes threadworms? What is the best treatment?

A.—Man is the only known host of *Enterobius vermicularis*; other species of the same genus occur in monkeys, but not in dogs or other animals. A free-living nematode, *Heterodera radicicola*, occurs in the roots of radishes; the eggs, when swallowed by man, are passed unaltered in the faeces, and this, in the past, gave rise to a fallacious description of "a new human threadworm, *Oxyuris incognita*."

Treatment is proverbially unsatisfactory, as is indicated by the variety of therapeutic measures recommended in the literature. Owing to the toxicity of the drugs used and the need for careful supervision to prevent reinfecting, all forms of treatment are best carried out under hospital conditions. The following give the best results: (1) *Gentian violet*, oral treatment. The adult dose is 1 gr. t.i.d., that for children 1 cg. daily for each year of apparent, not chronological, age, the treatment to be continued for eight days; it should be combined with enemas, to wash the worms out of the large bowel. (2) *Hexylresorcinol*, oral combined with enema treatment. The dose is 1 g. for adults and children over 10; below 10 years, 0.1 g. for each year of age. The drug should be administered in hard gelatin capsules. If the oral dose is given in the morning, a soapsud enema should be given the same evening, the latter to be followed by another enema of a 0.1% solution of hexylresorcinol crystals in water, which should be retained for fifteen minutes. More than one course of treatment may be necessary. (3) *Tetrachlorethylene* treatment is effective, but should be given only under hospital conditions. (4) Probably the most effective anthelmintic against the threadworm is *phenothiazine*, but its use is attended with considerable risk, and is probably justifiable only when other methods have failed. (See *Lancet*, Jan. 17, 1942, p. 86; and *British Medical Journal*, Feb. 7, 1942, p. 191.) The greatest problem is to prevent reinfection, and the treatment of one member of the family is futile if other members are infected. General hygiene is all-important. The patient should sleep alone and wear protective pants to prevent the hands touching the perianal region during sleep; underwear, towels, and bedding should be frequently washed and ironed; toilet seats should be scrubbed with cresol; finger-nails must be kept short and well scrubbed.

Systolic and Diastolic Variations in Hypertension

Q.—In a case of high blood pressure, whether of the malignant type or of essential hyperpiesia, is the difference between the systolic and the diastolic readings to be taken into account in assessing the gravity of a case? I have two cases and their B.P. readings are 190/80, 220/145. They are both cases of the essential hyperpiesia type. While one would naturally regard the latter as the more serious of the two, does the enormous difference between the readings of the former case make the prognosis more grave?

A.—The diastolic pressure is generally regarded as being the better indication of the severity of the hypertension because it represents the constant load which the arterial system is carrying and it reflects more accurately the resistance of the peripheral vessels. In essential hypertension the rise of diastolic and systolic pressure is not necessarily a proportionate one. The prognostic significance of the absolute height is difficult to evaluate except in cases with a marked rise. Minor variations in pulse pressure are not of much significance because of the several variable factors involved, such as the rate and the output per beat of the heart. A great increase, such as a pulse pressure of 110, as in the first case mentioned above, is an indication of rigidity of the aorta and great vessels, the effect of severe arteriosclerosis. The prognosis in the first case is therefore that of a case of severe arteriosclerosis without any considerable degree of hypertension. In old individuals with a very rigid aorta such pulse pressures are not very uncommon.

Turkish Baths

Q.—I should be grateful for information as to the therapeutic value of Turkish baths; what are the indications and contra-indications?

A.—Turkish baths act by promoting free diaphoresis and increasing tissue metabolism, thus promoting the excretion by the skin of waste products and tending to loss of weight. Their beneficial effect will be enhanced by free drinking of water during the bath, without which much of the benefit may be lost: constipation, for example, may be caused by excessive dryness of the faeces, and thus intestinal elimination may be hampered. Blood pressure is at first raised, but falls as perspiration becomes established; the bath may therefore be found helpful in cases of moderately raised pressure, but is contra-indicated if it is high or if there is arteriosclerosis. The eliminative action is beneficial in gout, but the amount of uric acid eliminated by the skin is negligible in comparison with that by the kidney. In individuals with sluggish skin action this may be promoted; but if perspiration is not quickly induced unpleasant if not dangerous results may occur. People in sedentary occupations with no opportunity for adequate exercise find Turkish baths helpful, and the shampooing process is useful in this respect, especially if the muscles are well kneaded. The loss of weight, which may be considerable, makes the bath useful in the obese; but the weight is often quickly regained, and unless combined with a strict dietetic regimen the ultimate results may be disappointing. There is a general sedative effect beneficial in functional nervous disorders, and a sense of well-being should be experienced after the bath if it is suited to the case. Perhaps the best evidence in favour is the fact that such baths have had a vogue for at least 2,000 years, which would not have been the case had not the effect been generally beneficial.

These general observations will indicate in what conditions Turkish baths may prove useful, but a word of warning is necessary: if the bathrooms are not efficiently ventilated, cleansed, and disinfected regularly, unpleasant results may occur which are obvious enough without description.

Exfoliative Dermatitis

Q.—I would like information concerning the diagnosis of exfoliative dermatitis. Is this the same as chronic pityriasis rubra? What treatment is considered most effective, and is anything known about the cause?

A.—The label "exfoliative dermatitis" covers a little-understood group of skin diseases in which there is widespread or universal inflammation and desquamation. Pityriasis rubra is applied to one variety. The exfoliation may be primary, or secondary to some pre-existing eruption, such as psoriasis, or follow ascertainable causes such as treatment with arsphenamine, or be associated with a blood disease (leukaemia). Simple local applications are best, such as boric vaselin; benefit sometimes follows small doses of a stock *B. coli* vaccine, or vitamin B complex.

Ratio of Corpuscles to Plasma

Q.—On centrifuging blood, it is found that the relative volume of corpuscles to plasma is greater in venous than in arterial blood. What is the reason for that?

A.—The red blood corpuscles are not rigid bodies and their size may be determined from moment to moment by their water content. If R.B.C.s are placed in solutions which are not isotonic to them then water passes across the corpuscular membrane to equalize the osmotic pressures inside and outside the corpuscle. While passing through the capillaries blood takes up carbon dioxide, which is mainly combined inside the corpuscle, as HCO'_3. Although some of the HCO'_3 ions migrate through the corpuscular membrane into the plasma, they are replaced by an equivalent number of Cl' ions. The result is that the osmotic pressure of the corpuscular content is increased and water passes into the cell and increases its volume. When the blood passes through the lung and CO_2 is evolved these processes occur in reverse order.

Prognosis in Angioneurotic Oedema

Q.—What is the average behaviour of a case of angioneurotic oedema? Do attacks usually recur during a lifetime, or do they cease spontaneously after a time? Can a mortality rate be given for the disease?

A.—Once a person has suffered from one attack of angioneurotic oedema another attack may be expected any time during the remainder of his or her life. The initial attack occurs more commonly after 40 years of age than before, and may accompany or replace another allergic condition. The individual attacks depend upon two groups of factors: first, a specific sensitization to some drug, inhalant substance, or food; and, secondly, a group of factors that temporarily deplete the body's store of protective adrenaline, such as prolonged worries, mental upsets, frequent excitements, overwork, and fatigue. So long as the specific causes have been determined and avoided or removed, and the adrenaline-depleting factors rectified, further attacks are unlikely. No mortality rate can be given as statistics are difficult: some patients die in their first attack; others who get successfully through this immediately consult their doctor in the hope that the ordeal will not be repeated.

Operation for Otosclerosis

Q.—A deaf patient has read of operations successfully performed which resulted in improvement in hearing. The operation appears to consist of fistulation of the semicircular canals. I should like to know if such treatment is practised to-day, and if so, with what success.

A.—Operation for the relief of deafness due to otosclerosis is based on the observation that an opening into one of the semicircular canals restores hearing, which diminishes again when the opening closes. The problem, therefore, has been to prevent the opening from closing. It is claimed that this can be done by an elaborate plastic operation which utilizes the membrana flaccida and the

membrana tensa with the adjacent part of the external auditory meatus to cover the opening. The opening is said to be more effective the nearer it is situated in the lateral semicircular canal to the vestibule at the anterior end. In order to make this flap lie over the opening, which is made under magnification with fine burrs, the head of the malleus and the incus must be first removed. Absence of any sepsis is essential to success. It is claimed that with a loss of about 50 decibels of hearing a lasting improvement of about 24 decibels on the average can be obtained in about 50% of the cases, and also that deterioration of the hearing may be arrested even if there is no improvement, as shown by persistence of a progressive deterioration in hearing on the opposite side. A rigid selection of cases is necessary, and the possible complications are evident; but these have not been numerous in the hands of those who have attempted these operations.

INCOME TAX

New Partnership

"I. B."—A and B commenced partnership shortly before April 5, 1942, B having before then been the sole proprietor. A notice of assessment shows that the partnership is assessed for 1942–3 on the amount of B's earnings for 1941–2. Is this satisfactory?

*** Yes. The rules with regard to cessation and commencement apply to the unit assessed—in such a case as this to the firm and not to the individual partners. As things stand A and B are jointly assessed for 1942–3 in the amount of B's earnings—presumably a smaller sum than the amount of their joint earnings *in* 1942–3. For example, suppose A to be entitled to one-third and B to two-thirds of the profits, and that B's earnings in 1941–2 were £1,500, then in effect A is charged tax on £500 for 1942–3 and B on £1,000, whereas their earnings may well have been greater. It depends on the figures, of course, but a claim to cessation resulting in both partners paying on their actual earnings for 1942–3 would probably be against their interests.

Entering the Forces from Eire

"Y. Z." came to Great Britain from Eire on July 5, 1943. He earned £100 as a locumtenent between that date and October 10, 1943, when he joined the R.A.M.C. What is the basis of his liability?

*** Assuming that he has come to this country as an occasional resident and not with the intention of establishing a residence here, he is liable on his earnings in the United Kingdom (and on military pay issued from here even while not so resident), less, of course, the usual deduction for cost of uniform and personal allowance as a married man. He will not be liable on income arising in Eire or from the holding in 3% War Loan. There is no six-monthly period of grace—the six months only applies to income from abroad, and then only if residence in any one financial year does not exceed that period. He should make his return, through the Army Agents, as an occasional resident if that is the fact in his case.

LETTERS, NOTES, ETC.

Shock Therapy

DRS. MARGARET M. METHVEN and EDWARD S. STERN (joint secretaries, Child Psychiatry Group, Royal Medico-Psychological Association) write: From the correspondence in the *Journal* regarding shock therapy it appears that there is considerable misapprehension as to its uses. Convulsive therapy is suitable for certain mental disorders in adults, but although we have made inquiry, we are unable to trace a single case where it has been employed in children.

Thiouracil for Hyperthyroidism

Dr. I. FRIEDMANN (London, S.W.1) writes: With reference to the treatment of hyperthyroidism with thiouracil (*Journal*, Feb. 26, p. 313) may I point out that the use of thiouracil must also be controlled by periodical counts of the white blood cells. In two cases treated in East Ham Memorial Hospital, a marked drop of the white blood cells to 2,000 per c.mm. with 50% lymphocytes followed a short course of treatment with thiouracil. Thiouracil discontinued, the thyroid glands were surgically removed. The histology showed the characteristic features of hyperthyroidism and signs of involution evidenced by cuboidal lining epithelial cells and deep-staining colloid.

Children's Food Fads

The Hertfordshire County Council has published in a pamphlet the results of an inquiry undertaken by Mr. F. Le Gros Clark on the school child's taste in vegetables. The inquiry was made by an examination of some 400 school essays set at the county schools on "The Vegetables we Eat." The preferences expressed by the youngsters, who were mostly aged between 9 and 11, were very much what was to be expected. The majority dislike parsnips and swedes, turnips are not much more popular, carrots are favoured, though the sweet taste is objected to by some, onions are held in high esteem, runner beans are well liked, but marrow is detested—"a slimy sort of vegetable," says one child. Children of such tender years are hardly expected to mention the nutritive qualities of food, but 20% of them did so, and about 6% trotted out the word "vitamin." But in spite of Mr. Le Gros Clark's ingenuity and patience there is a feeling that such a study is vitiated unless the kind of cooking with which the child is familiar is taken into account. "Heaven sends us good meat," said David Garrick, "and the devil sends the cooks." When the "meat" is vegetables he sends the worst cooks he has in his kitchen. We grow the best vegetables in the world and ruin them in the pot. The bias against greens among these children might easily be accounted for by the sodden tasteless messes put before them, and the indifference to potatoes, especially when boiled, may derive from the same cause. The school canteen can do much to eradicate food dislikes in children, with great advantage to their nutrition, especially if the mothers at home pay more attention to the saucepan and less to the children's whims.

Ether as a Cleansing Agent for Wounds

Mrs. M. A. DOBBIN CRAWFORD, M.D., F.R.C.S.I., writes: Minor injuries being of greater importance in war than in peace, continued search is made for a method of treatment which will ensure the least possible disability and loss of working time. To obtain this result, a wound after treatment should be and should remain clean, dry, and undisturbed. The purpose of this note is to redirect attention to a method in use during the last war, apparently by-passed and forgotten. I have seen this method used most effectively during seven years of country practice and have used it during 18 months in a large factory. In the country—remote country, 40 miles from the nearest hospital—every type of injury was treated, the result of hunting, farm, road, and domestic accidents. Not one injury so treated developed sepsis. All the wounds healed by first intention or by clean granulation. A similar result obtained in factory practice. It is a method of extreme simplicity. It avoids the use of any water or antiseptic lotion. The cleansing agent used is ether; the method this:

(1) The wound is covered by a sterile dressing while the surrounding skin is thoroughly cleaned with ether and sterile dabs.
(2) The skin immediately around the wound is similarly cleaned.
(3) Using a Silk's metal anaesthetic can, the wound is thoroughly irrigated with ether, any particle of dirt being removed with forceps or sterile wool.
(4) Surrounded with sterile cloths the wound is then treated, any dead tissue excised, bleeding-points secured, skin accurately sutured.
(5) Skin may have a final painting with merthiolate (formerly with iodine, which was also sometimes used in preparation of the skin).
(6) Dry sterile dressing, to be undisturbed for at least five days, better still a week; if there is loss of skin preventing suture and not requiring graft, the final dressing is with sterile gauze and acriflavine emulsion, again left undisturbed for at least five days.

Similar treatment is used for burns of the first and second degrees. No anaesthetic is required if the blisters are intact. Thorough cleansing of the skin with ether and sterile dabs is followed by removal of the blistered cuticle and dressing with acriflavine and sterile gauze. This dressing is left undisturbed for at least five days while the burned skin heals without interruption; the blistered area will be found clean and dry, the reddened area healed. The patient is seen and is warned to report any pain, but the wound being comfortable is undisturbed. The pain caused during this treatment is not severe and is of short duration. The sting or smart is much less than that of spirit and causes no distress to the average patient who has suffered minor injury. Where the wound is larger or more severe anaesthesia will in any case be needed for repair. There is nothing new about this treatment. Ether was used as cleansing agent for wounds a quarter of a century ago. I saw a knee-joint which had been penetrated by the iron spike of a railing heal without any trouble after excision of the wound and reverse ether irrigation. Gynaecologists many years ago used ether as routine to clean the pelvic peritoneum contaminated by pus during laparotomy. Such experiences of this admirable agent leave me bound to prefer it to any watery solutions which soak the tissues. Their use I can only consider a regression in surgical technique.

A Warning

During the past two years many complaints and inquiries have been received concerning a Norwegian medical woman, married to a British subject, who was temporarily registered in this country but whose registration has now been cancelled by the General Medical Council. Doctors who receive a visit from this lady would be well advised not to part with money.

Corrigendum

In the *Journal* of March 18 (p. 411), under the heading "Pruritus Ani and Vulvae," in the "Any Questions?" section, there was a reference to "intensive treatment with vitamins A or B_1." This should have read, "vitamin A or B_2."